

FULTON TROTTER ARCHITECTS

PRELIMINARY SITE INVESTIGATION (PSI) AND DETAILED SITE INVESTIGATION (DSI)

SAMUEL GILBERT PUBLIC SCHOOL,
RIDGECROP DRIVE, CASTLE HILL, NSW



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PRELIMINARY SITE INVESTIGATION (PSI) AND DETAILED SITE INVESTIGATION (DSI)

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ABBREVIATIONS

ACM	Asbestos-containing material
FA	Friable asbestos
AF	Asbestos fines
ASRIS	Australian Soil Resource Information System
BTEX	Benzene, toluene, ethylbenzene and xylene
DSI	Detailed site investigation
DQI	Data quality indicators
EPA	Environmental Protection Authority, formerly also known as Department of Environment, Climate Change and Water (DECCW)
EIL	Ecological investigation levels
Ha	Hectares
HIL	Health investigation level
HSL	Health screening level
LEP	Local Environment Plan
mAHD	metres relative to Australian Height Datum
mBGL	metres below ground level
mBTOC	metres below top of casing
NATA	National Association of Testing Authorities
NEPM	National Environment Protection Measure
NL	Not limiting
PAHs	Polycyclic aromatics hydrocarbons
PID	Photo-ionisation detector
PQL	Practical quantitation limit
PSI	Preliminary site investigation
QA/QC	Quality assurance and quality control
RAP	Remediation action plan
RPD	Relative percentage difference
SSD	State Significant Design
TRH	Total recoverable hydrocarbon

EXECUTIVE SUMMARY

WSP Australia Pty (WSP) was commissioned by Fulton Trotter Architects (FTA) to undertake a preliminary site investigation (PSI) and a detailed site investigation (DSI) at Samuel Gilbert Public School, described as Lot 1 in Deposited Plan 719671, Ridgecrop Drive, Castle Hill, NSW (the school).

The school is currently operating as a pre-kindergarten and primary school. Portions of the school are proposed to be demolished and upgraded. The portion of the school proposed for redevelopment is referred to as 'the site'.

Due to the scale of the project, a State Significant Design (SSD) approval supersedes the requirement for a local council development application. The SSD application (SSD 9274) requires the site contamination assessment to, 'assess and quantify soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with [State Environmental Planning Policy No 55]'.

The purpose of the PSI and DSI was to determine the current contamination status of soil beneath the site. The objectives of the investigation were to:

- assess the current contamination status of the site, with respect to soil contamination, within the identified design footprint to meet the requirements of the SSD
- assess the potential risks associated with contamination at the site (if identified), with respect to demonstrating the site's suitability for proposed use in accordance with the SSD

The scope of works comprised a desktop review of available information (current and historical) and investigation works comprising soil investigations at 20 locations, including 11 test pit locations and hand augering at 9 locations, and analysis of selected soil samples for contaminants of concern.

Aerial imagery indicates that the site was heavily vegetated prior to 1986 when the school was constructed in its current configuration, without the current demountable buildings. The current demountable buildings were installed prior to 2014. The school was owned by the Crown (for the purposes of the Public Instruction Act, as a public school) since 1985.

The historical review has not identified any uses or owners which suggest grossly contaminating activities have been undertaken on the site. Surrounding land has been utilised for residential and educational purposes since at least the 1980s and no potentially significant contaminating activities have been identified for surrounding land uses immediately adjacent to the school property. Properties further south-west of the site located within an industrial zone have been identified to hold licences for waste generating activities.

No field indicators of contamination were observed. Subsurface material generally consisted of fill described as silty sand and silty clay to approximately 0.1 m below ground level (mBGL) to 0.5 mBGL, then natural silty clays, silty sand or clayey sand, then sandstone from approximately 0.6 mBGL to the extent of the investigation.

Concentrations of total recoverable hydrocarbons (TRH) were reported in primary samples from test pit TP03 and hand augers HA03, HA04 and HA08. The majority of the detections were only marginally above the practical quantitation limits (PQLs). Concentrations were not considered to be significant and were reported below the health-based adopted site criteria.

All results for volatile hydrocarbons and polycyclic aromatic hydrocarbons were below the laboratory PQLs. Concentrations of some heavy metals were reported in soil samples for the site, with results generally consistent between locations and below the adopted site criteria.

No asbestos was observed in soil during the on-site work or detected by the laboratory in soil samples submitted for analysis.

The results of the investigation indicate the identified design footprint at the school is suitable for development and future use as a primary school under the SSD.

1 PROJECT BACKGROUND

1.1 BACKGROUND

WSP Australia Pty (WSP) was commissioned by Fulton Trotter Architects (FTA) to undertake a preliminary site investigation (PSI) and a detailed site investigation (DSI) at Samuel Gilbert Public School, described as Lot 1 in Deposited Plan 719671, Ridgescrop Drive, Castle Hill, NSW (the school).

The school is currently operating as a pre-kindergarten and primary school and includes several demountable buildings, permanent teaching spaces, sporting fields, paved courtyards and large vegetated areas.

It is understood that FTA has been engaged by the Department of Education as the head design consultant for the demolition and upgrade of a portion of the school. The upgrade will comprise replacing 11 demountables with 25 new permanent teaching spaces. The portion of the school proposed for redevelopment is referred to as 'the site'. The proposed design footprint is presented on Figure 1.

Due to the scale of the project, a State Significant Design (SSD) approval supersedes the requirement for a local council development application. The SSD application (SSD 9274) requires the site contamination assessment to, 'assess and quantify soil and groundwater contamination and demonstrate that the site is suitable for the proposed use in accordance with [State Environmental Planning Policy No 55]'.

The purpose of the PSI and DSI was to determine the current contamination status of soil beneath the site.

1.2 OBJECTIVES

The objectives of the investigation were to:

- assess the current contamination status of the site, with respect to soil contamination within the identified design footprint, to meet the requirements of the SSD
- assess the potential risks associated with contamination at the site (if identified), with respect to demonstrating the site's suitability for proposed use in accordance with the SSD.

2 SCOPE OF WORKS

The scope of works for the investigation comprised:

- a desktop review of available information (current and historical) including:
 - site setting (geology, hydrogeology, topography and surrounding land uses)
 - regional groundwater bore search
 - NSW Environment Protection Authority (EPA) regulatory databases
 - planning certificates
 - historical aerial photographs
 - historical land titles search
- DSI works including:
 - soil investigations at 20 locations including 11 test pit locations (TP01 and TP03 to TP12) and hand augering at 9 locations (HA1 to HA9)
 - laboratory analysis of selected representative soil samples for contaminants of concern, which comprise eight heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc), total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene and naphthalene (BTEXN), polycyclic aromatic hydrocarbons (PAHs) and asbestos.
- preparation of this report which focuses on assessing the soil contamination status of the site and assessing the need for remediation.

3 SITE LOCATION AND SETTING

3.1 SITE LOCATION AND IDENTIFICATION

The general site identification details are provided in Table 3.1.

Table 3.1 Summary of general site information

Site address	The corner of Ridgescrop Drive and Gilbert Road, Castle Hill, NSW
Property identification	Lot 1 in Deposited Plan 719671
Site area	0.85 hectares (ha)
Current site use	Pre-kindergarten and primary school
Local government area	The Hills Shire Council
Current zoning	R2 Low density residential land use under <i>The Hills Shire Council Local Environmental Plan 2012</i>
Proposed site use	Continued use as a pre-kindergarten and primary school

3.2 SITE INSPECTION

A site inspection was conducted on 9 July 2018 by a WSP environmental scientist. The school is bound by Ridgescrop Drive to the south and Gilbert Road to the south-east, Knightsbridge Shopping Centre to the east, Castle Glen Reserve to the north and heavily vegetated bushland to the west. The main access to the school was via Ridgescrop Drive, however there was also an access driveway off Gilbert Road.

The school included the following:

- The northern portion of the school comprised an oval and heavily vegetated land.
- The central portion of the school was occupied by 20 permanent buildings, 13 demountable buildings, a library, a special programs building, open and shaded paved courtyards, paved walkways, two halls, two paved sports courts, and an after school care building.
- A carpark is located at the western portion of the school.
- Land along the southern portion is occupied by heavily vegetated and grasses land.

The site consists of a portion of the school proposed to be upgraded and includes a portion of grassed and vegetated land at the southern portion of the school, portions of two home base buildings and a central open courtyard.

The site location and site layout are shown on Figures 1 and 2, respectively, with site photographs taken during the site inspection and field works included in Appendix E.

3.3 TOPOGRAPHY

The site is situated at approximately 95 metres Australian Height Datum (mAHD). Surrounding topography at the school generally slopes from the north (102 mAHD) to south towards the corner of Ridgescrop Drive and Gilbert Road (92 mAHD; Google Earth, 2018).

The nearest surface water body is Castle Hill Creek, located approximately 150 m south of the site.

3.4 GEOLOGY

The Department of Minerals and Energy, 1991, 1:100,000 Penrith Geological Map Sheet 9030 indicates that the regional geology in the vicinity of the site is underlain by Hawkesbury Sandstone described as medium to very coarse-grained quartz sandstone, minor laminated mudstone and siltstone lenses.

The CSIRO Australian Soil Resource Information System (ASRIS), http://www.asris.csiro.au/index_ie.html) accessed July 2018, indicates that soils underlying the site are mapped as having an extremely low probability of occurrence of acid sulfate soils.

3.5 HYDROGEOLOGY

A review of the licensed borehole register on the NSW Government Water Information website (<https://realtime.data.watarnsw.com.au/water.stm>) accessed July 2018 indicated that there were no registered groundwater bores within a 1 km radius of the site.

Based on the surrounding topography, and the proximity of the school to Castle Hill Creek it is considered that groundwater is likely to flow south.

4 SITE HISTORY REVIEW

4.1 SECTION 10.7

In order to assess any changes to the heritage listing zoning and other planning properties pertaining to the site, a current Section 10.7 (2) and (5) certificate of the *Environmental Planning and Assessment Act 1979* (formerly Section 147) was requested from the Hills Shire Council. The certificate did not identify planning issues or heritage listed items.

A copy of the Section 10.7 certificate is provided in Appendix B.

4.2 HISTORICAL AERIAL PHOTOGRAPHS

Historical aerial photographs taken in 1943, 1961, 1970, 1986, 1991 and 2014 which capture the site were reviewed, and a summary of the observed land use changes is presented in Table 3.1. The historical aerial photographs are presented in Appendix C.

Table 4.1 Historical Aerial Photograph Review

YEAR	ON-SITE LAND USES	SURROUNDINGS
1943	The site and remaining portions of the school is heavily vegetated. Unpaved roads cross the school at the western portion of northern portions.	The site is surrounded by heavily vegetated land to the north, south and west. Land to the east is occupied by rural land used for agricultural purposes with small residential units.
1961	The site and school remain the largely unchanged.	The surrounding land uses remain largely unchanged.
1970	The site and school remain largely unchanged.	The surrounding land uses remain largely unchanged.
1986	The school infrastructure including the permanent buildings, library, special programs building, courtyards, halls and paved sports courts at the central portion of the school has been constructed. The carpark to the west has been paved. The large oval at the northern portion of the school is present. The school appears to be heavily vegetated in remaining portions. The portion of the school which comprise the site is largely in its current configuration.	Castle Glen Reserve has been formed to the north, land to the west is heavily vegetated. Ridgecorp Drive and Gilbert Road have been paved south and south-east of the site respectively. Land to the south and east is occupied by residential land.

YEAR	ON-SITE LAND USES	SURROUNDINGS
1991	The site and school remain largely unchanged	The surrounding land use remains largely unchanged except for the construction of Knightsbridge Shopping Centre east of the school.
2014	The school remains the same except for the placement of demountable buildings. The school is in its current configuration.	The surrounding land uses remain largely unchanged.

4.3 TITLE SEARCH

Historical certificates of title were provided by the Land and Registry Services, NSW and are presented in Appendix D.

The historical titles indicate that the current lot was previously subdivided and has had a range of proprietors including private individuals (1926 to 1985 at the latest date), Her Majesty Queen Elizabeth II (for the purposes of the Public Instruction Act) (1985 to 2006) and the Minister for Education and youth Training (2006 to date).

4.4 EPA ONLINE RECORDS

The following information was collected from the NSW EPA *Protection of the Environment Operations Act 1997* (POEO Act) public register (<http://www.epa.nsw.gov.au/prpoeoapp/>) and NSW EPA contaminated land record database (<http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx>) website databases (searches undertaken on 19 July 2018). The search found the following:

- There are no notices or licenses listed for the site on the POEO Act register. Licences have been issued for the following sites within a 2 km radius of the site:
 - A licence was issued for Hobson Engineering Co Pty Ltd located approximately 1.8 km south-west of the site. The licence is no longer in force and was issued for hazardous, industrial or Group A waste generation or storage.
 - A licence was issued for Holt Lloyd Australasia Pty Ltd located approximately 2 km south-west of the site. The licence is no longer in force and was issued for hazardous, industrial or Group A waste generation or storage.
 - A licence was issued for Parker Hannifin (Australia) Pty Ltd, located approximately 1.5 km south-west of the site, for hazardous, industrial or Group A waste generation or storage.
 - A licence for Sigma-Aldrich Pty Ltd located approximately 1.2 km south-west for hazardous, industrial or Group A waste generation or storage. An additional licence was also held for hazardous, industrial or Group A waste generation or pharmaceutical and veterinary products production, under a separate section of the POEO Act.
- There are no sites within a 2 km radius of the site on the list of contaminated sites notified to the NSW EPA.

4.5 HERITAGE

No sites are listed on the NSW Environment and Heritage register.

4.6 PREVIOUS ENVIRONMENTAL INVESTIGATIONS

WSP have not been supplied with any previous environmental investigations pertaining to the site.

4.7 HISTORICAL SUMMARY

Aerial imagery indicates that the site was occupied by heavily vegetated land prior to 1986 when the school was constructed in its current configuration without the current demountable buildings. The current demountable buildings were installed prior to 2014. The school was owned by the Crown (for the purposes of the Public Instruction Act, as a public school) since 1985.

The historical review has not identified any uses or owners which suggest grossly contaminating activities have been undertaken on the site. Surrounding land has been utilised for residential and educational purposes since at least the 1980s and no potentially significant contaminating activities have been identified for surrounding land uses immediately adjacent to the school. Sites further south-west of the school located within an industrial zone have been identified to be licenced for waste generating activities.

5 ENVIRONMENTAL DATA QUALITY OBJECTIVES

Systematic planning and verification is critical to successful implementation of a contaminated site investigation to ensure that the data from the site assessment is reliable and representative of the conditions of the site. A process for establishing data quality objectives (DQOs) for an investigation has been defined by the United States Environmental Protection Agency. That process has been adopted by the Australian Standard AS4482.1-2005 and referenced by the *National Environment Protection (Assessment of Site Contamination) Measure 1999* (NEPM, as amended 2013).

The DQO process is a seven-step iterative planning approach used to plan for environmental data collection activities. It provides a systematic approach for defining the criteria that a data collection design should satisfy, including when, where and how to collect samples or measurements, determination of tolerable decision error rates and the number of samples or measurements that should be collected. The seven step process for this investigation is discussed and summarised in Table 5.1.

Table 5.1 Project DQOs

STEP/PURPOSE	DQO INPUT
Step 1 State the problem To summarise the contamination problem that will require new environmental data and to identify the resources available to resolve the problem.	FTA have identified a portion of Samuel Gilbert Public School to be redeveloped for continued use as a school. Therefore, an DSI was required to provide a more detailed understanding of potential contamination at the site to facilitate remedial strategy assessment (if required). More specifically, the objectives are to: — assess the soil contamination status of the site — assess the potential risks associated with contamination (if identified) with respect to ongoing school use.
Step 2 Identify the decisions To identify the decisions that requires new environmental data to address the contamination problem.	The principal study question is: to what extent has the site been impacted by potential contamination? In order to answer this question, the decisions the additional investigation is required to address are: — What is the extent of contamination at the site? — Do contaminant concentrations in soil pose an unacceptable risk to potential receptors? — Do contaminant concentrations exceed the relevant regulatory assessment criteria? — Is remediation or corrective action required to manage contamination?
Step 3 Identify inputs to the decisions To identify the information required to support the decision and to specify which inputs require new environmental measurements.	To establish the extent of the contamination, a targeted soil investigation was undertaken at 11 on-site test pit locations and 9 on-site soil bores locations. Environmental data included in the soil assessment comprised subsurface condition descriptions, photo-ionisation detector (PID) readings and laboratory data. Soil samples were collected from each soil bore and analysed for TRH, benzene, toluene, ethylbenzene and xylene (BTEXN compounds), polycyclic aromatic hydrocarbons (PAHs) and arsenic, cadmium, chromium, copper, mercury, nickel and zinc (heavy metals) and asbestos. Analytical results were compared to the assessment criteria detailed in Section 7.

STEP/PURPOSE	DQO INPUT
Step 4 Define the study boundaries To define the spatial and temporal boundaries that the data must represent to support the decision.	The location and extent of the study area is shown on Figures 1 and 2. The total depth of investigation was 1.5 mBGL. The temporal boundaries of the investigation were June 2018 to July 2018.
Step 5 Develop a decision rule To develop a logical 'if...then...' statement that defines the conditions that would cause the decision maker to choose among alternative actions.	Analytical results have been compared to land use criteria provided in Schedule B1 Investigation Levels for Soil and Groundwater of the NEPM (2013), For the purposes of this assessment, criteria were adopted taking into account both the site's current use as a primary school and future use as a continued primary school (of which a low residential land use criteria is applicable). If the results are found to exceed the criteria, then further investigation, management or remediation will be required.
Step 6 Specific limits on decision errors To ensure the quality of a dataset, data has to be precise, complete and comparable in order for decisions on the data to be made.	The data was assessed against various quality attributes such as selectivity, precision, completeness and comparability. In accordance with the NEPM (2013), data was evaluated to determine any limitations within the dataset. This included the use of limits regarding limits for relative percentage differences (RPDs) between primary and quality assurance and quality control (QA/QC) data, rinsates, spikes and duplicates.
Step 7 Optimise the design for obtaining data To identify a resource-effective sampling and analysis design for generating data that can reasonably satisfy the DQOs.	This assessment was designed after a review of environmental information pertaining to the site, identification of site features/structures and accessibility of specific areas of the site and neighbouring properties. The investigation proposal was reviewed at critical times during the project and amended where necessary based on site conditions, professional judgement and liaison with FTA.

6 SAMPLING AND ANALYSIS PROGRAM

6.1 SAMPLING RATIONALE

The sampling plan comprised 20 grid-based sampling locations. For grid-spaced sampling, Table A in the NSW EPA 1995, *Sampling Design Guidelines* provides the recommended minimum number of sampling points required for site characterisation based on detecting circular hot spots. The guideline indicated a minimum of 20 sampling locations are recommended for an 0.85 ha site. Sampling locations were selected taking into account the presence of heavy vegetation, buildings on-site, other physical limitations associated with the school infrastructure and the limitations of subsurface conditions. Test pit locations were advanced to depths varying from 0.75 mBGL to 1.45 mBGL and hand auger locations were advanced to depths varying from 0.5 mBGL to 1.5 mBGL.

The investigation comprised a mix of boreholes and test pits. Test pits were advanced where possible to allow for a better visual understanding of the soil profile below the site, boreholes were advanced at remaining locations limited by accessibility.

6.2 FIELDWORK METHODOLOGY

6.2.1 PRELIMINARIES

A desktop search for underground services using the Dial Before You Dig (DBYD) service was undertaken prior to intrusive investigations. Service location and the intrusive investigation was conducted on 9 July 2018. In accordance with WSP policy, all works were undertaken in accordance with the health, environment and safety plan and safe work method statements prepared for the site. All site locations were cleared by a suitably qualified service locator prior to the commencement of intrusive works, utilising DBYD plans provided by asset owners.

6.2.2 FIELDWORKS METHODOLOGY

The fieldworks methodologies adopted during the investigation were consistent with WSP field procedures. These have been summarised in Table 6.1.

Table 6.1 Field methodologies

TASK	DETAILS
Service clearance	All investigation locations were checked for the presence of buried services by an experienced service locator and cross-checked with the DBYD plans obtained from all asset owners.
Test pitting	Test pits were advanced using a five tonne excavator attached with a toothless bucket using 50 mm scrapes.
Drilling method	All bores were advanced using either hand auger when the geology comprised fill or solid stem auger in natural material to the maximum depth of investigation (1.5 mBGL).
Soil logging	Soil logging was completed based on field interpretation and was generally consistent with Unified Soil Classification System and Australian standard (AS) 1726-1993.

TASK	DETAILS
Soil bore and test pit backfilling	All soil bores and test pits were backfilled using excavated soil.
Soil sampling method	Soil samples were collected directly from the hand auger or the excavator bucket using disposable nitrile gloves. All samples collected were placed in laboratory supplied containers with Teflon lined lids. Soil samples were generally collected from the following depths: — surface (0.1-0.2 mBGL) — 0.5 mBGL — 1.0 mBGL — 1.5 m BGL — at changes in lithology or evidence of contamination. All soil samples collected during the works were screened with a calibrated photo-ionisation detector (PID) to assess if volatile organic compounds (VOCs) were present. Samples were collected directly from the auger, with the sampling equipment cleaned with suitable phosphate-free detergent and rinsed with distilled water between sampling episodes to minimise the potential for cross-contamination.
Sample preservation	Samples were stored in an insulated cooler box with ice immediately after sampling. Samples were kept chilled prior to and during delivery to the selected National Association of Testing Authorities (NATA) accredited laboratory via a courier under appropriate 'chain of custody' documentation.
Quality assurance/quality control (QA/QC)	Intra- and inter-laboratory duplicate samples were collected in the field at the rate of 1 duplicate pair for 22 primary samples. One trip blank and one rinsate blank sample was collected during the sampling event.

6.3 LABORATORY ANALYSIS

Selected soil samples collected were submitted to the primary analytical laboratory for analysis for contaminants of concern at the site. Soil samples were selected based on a combination of sample location and field observations, including PID results. One intra-laboratory and one inter-laboratory duplicate samples were collected.

Eurofins Australia Pty Ltd (Eurofins) was the primary laboratory for the soil sample analysis, with SGS Australia Pty Ltd (SGS) used as a secondary laboratory. Both Eurofins and SGS are NATA accredited for the soil analyses conducted with the exception of asbestos quantification, for which no NATA-approved methodology exists.

A summary of samples and initial analyses is presented in Table 6.2.

Table 6.2 Soil laboratory sampling and analysis plan

ANALYTE	PRIMARY SAMPLES	INTRA- AND INTER-LABORATORY DUPLICATES	RINSATE	TRIP SPIKE/TRIP BLANK
Heavy metals	22	2	1	-
PAHs	22	2	1	-
TRH	22	2	1	2

ANALYTE	PRIMARY SAMPLES	INTRA- AND INTER- LABORATORY DUPLICATES	RINSATE	TRIP SPIKE/TRIP BLANK
BTEXN	22	2	1	2
Asbestos (quantitative method as per NEPM (2013) ¹	20	2	-	-
pH	1	-	-	-
Cation exchange capacity	1	-	-	-
Clay content	1	-	-	-

NEPM – National Environment Protection (Assessment of Site Contamination) Measure 1999 (as amended 2013)

TRH –total recoverable hydrocarbons

BTEXN – Benzene, toluene, ethylbenzene, xylene and naphthalene

PAHs – Polycyclic aromatic hydrocarbons

7 SOIL ASSESSMENT CRITERIA

To assess the contamination status, the NSW Environment Protection Authority (EPA) refers to the NEPM (2013), specifically Schedule B1, Investigation Levels for Soil and Groundwater. Schedule B1 provides a framework for the use of investigation and screening levels based on a matrix of human health and ecological risks.

7.1 HEALTH BASED CRITERIA

To assess the presence and extent of soil contamination at a site, the NEPM (2013) provides health investigation levels (HILs) and health screening levels (HSLs) for the assessment of impacted soil.

HILs provide an assessment of potential risk to human health from chronic exposure to contaminants, and have been developed based on land use setting. As the purpose of this investigation is to assess the site against both the future land use as a primary school the 'HIL A' criteria for low density residential land use with gardens/accessible soil has been adopted which is the applicable land use criteria for a primary school setting.

HSLs have been developed for selected petroleum compounds and fractions and are applicable to assessing human health risk via the vapour intrusion and inhalation pathway. The HSLs depend on specific soil physicochemical properties and land use scenarios. They apply to different soil types and depths. For the purpose of this investigation, both the 'HSL A' criteria for low density residential land use with gardens/accessible soil has been adopted.

HSLs have been adopted based on a subsurface comprising of sand. This soil type has been selected taking a conservative approach based on site observations of the geology encountered and the results of clay content analysis undertaken on soils at the site. Analysis of composite soil samples collected from 0.1 mBGL in location TP10 indicated that clay content was <1%. The HSLs for sand have been adopted as a conservative approach given the sandy silt material observed in the upper soil profile of most sampling locations.

HSLs are also provided for asbestos contamination in soil, for bonded asbestos-containing material (ACM), friable asbestos (FA) and asbestos fines (AF). As per the WA Department of Health (DoH) 2009, *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*, a 10 L sample is collected and screened manually on-site through a ≤7 mm sieve. Any ACM/FA retained on the sieve (i.e. >7 mm in size) is then analysed in the laboratory for bonded ACM, with results quantified in percent weight by weight (%w/w). For FA/AF a separate sample of approximately 500 mL is collected, sieved in the laboratory and gravimetric determination of asbestos (<7 mm) undertaken. The results are then compared to the NEPM HSLs. If the HSLs are not exceeded, then no contamination management options are required provided the surface soil is free of visual asbestos. If results exceed the HSLs, further assessment, management and/or remediation is required.

Management limits have also been provided for TRH fractions and applied for a 'urban residential and open space' land use. Management limits are the maximum values that should remain in a site following evaluation of human health and ecological risks.

Table 7.1 Soil assessment criteria – health-based criteria

ANALYTE	LOW DENSITY RESIDENTIAL LAND USE			
	HSL D, sand ¹ (mg/kg)		HILs ² (mg/kg)	Management limits ³ (mg/kg)
	0 m TO <1 m	1 m TO <2 m		
TRH/BTEXN COMPOUNDS				
TRH C ₆ –C ₁₀ less BTEX (F1)	45	70	-	700
TRH >C ₁₀ –C ₁₆ less naphthalene (F2)	110	240	-	1000

ANALYTE	LOW DENSITY RESIDENTIAL LAND USE			
	HSL D, sand ¹ (mg/kg)		HILs ² (mg/kg)	Management limits ³ (mg/kg)
	0 m TO <1 m	1 m TO <2 m		
TRH >C ₁₆ -C ₃₄	-	-	-	2,500
TRH >C ₃₄ -C ₄₀	-	-	-	10,000
Benzene	0.5	0.5	-	-
Toluene	160	220	-	-
Ethylbenzene	55	NL	-	-
Xylene (total)	40	60	-	-
PAHs				
Naphthalene	3	NL	-	-
PAHs (total)	-	-	300	-
Benzo(a)pyrene TEQ ⁴	-	-	3	-
HEAVY METALS				
Arsenic	-	-	100	-
Cadmium	-	-	20	-
Chromium (total)	-	-	100	-
Copper	-	-	6,000	-
Lead	-	-	300	-
Mercury	-	-	40	-
Nickel	-	-	400	-
Zinc	-	-	7,400	-
ASBESTOS				
Bonded ACM	0.05% w/w		-	-
FA and AF	0.001% w/w		-	-
All forms of asbestos	Not visible in surface soil		-	-

Notes

- No assessment criteria available

NL Non-limiting due to maximum vapour concentrations being below the acceptable health risk level.

(1) NEPM (2013) Schedule B1 Table 1A(3)

(2) NEPM (2013) Schedule B1 Table 1A(1)

(3) NEPM (2013) Schedule B1 Table 1B(7)

(4) Toxicity equivalency quotient, a weighted sum of carcinogenic PAHs

7.2 ECOLOGICAL SCREENING LEVELS AND ECOLOGICAL INVESTIGATION LEVELS

The NEPM (2013) also provides ecological investigation levels (EILs), which were developed for metals, naphthalene and pesticides. The EILs take into consideration the physiochemical properties of soil and contaminants and the capacity of the local ecosystem to accommodate increases in the contaminant levels. The EILs are derived using the following equation:

$$EIL = \frac{\text{added contaminant limit } ACL}{\text{ambient background concentration } ABC}$$

The ABC is the background contaminant level and requires measurement at appropriate reference points at the site. The ACL, which is provided in the NEPM (2013), is the maximum contaminant concentration added to the naturally occurring background level, exceedances of which may result in adverse effects on plant health. EILs corresponding to urban residential land use were applicable for this investigation.

Tables 1B(4) and 1B(5) of the NEPM (2013) provide generic EILs for aged arsenic and lead, and fresh DDT and naphthalene in soils (irrespective of their physiochemical properties). Aged values are applicable for contamination present in soil for at least two years. EILs are provided for various land uses including 'areas of ecological significance', 'urban residential and open space', and 'commercial and industrial'. The 'urban residential and open space' land use EILs have been considered for this investigation.

Site-specific EILs for chromium (III), copper, nickel and zinc have been calculated using the CSIRO Ecological Investigation Level Calculation Spreadsheet provided online in the ASC NEPM Toolbox (<http://www.scew.gov.au/node/941>). These calculations require an understanding of the cation exchange capacity (CEC), clay content and pH of the residual soil at the site.

A composite soil sample from location TP10 was analysed for clay content, CEC and pH. Based on the results of these analyses, the following values were used for calculation of EILs:

- a pH of 8
- a CEC of 16 cmol/kg
- clay content of 1%.

To calculate aged ABCs, the spreadsheet requires the state and traffic volume to also be entered. These were entered as 'NSW' and 'low' respectively.

The NEPM (2013) provides ecological screening levels (ESLs) for TRH, BTEXN compounds and PAHs for use as an initial screening risk assessment to determine whether laboratory analysed concentrations of contaminants potentially pose a risk to plant growth. For the purpose of this investigation, ESLs for 'urban residential and public open space' land uses with coarse-grained soil textures have been considered.

Ecological criteria are outlined in Table 7.2.

Table 7.2 Soil assessment criteria – ecological criteria

ANALYTE	EILs (mg/kg) ¹	ESLs (mg/kg) ²
TRH F1	-	180
TRH >C ₁₀ -C ₁₆	-	120
TRH >C ₁₆ -C ₃₄	-	300
TRH >C ₃₄ -C ₄₀	-	2,800
Benzene	-	50

ANALYTE	EILs (mg/kg) ¹	ESLs (mg/kg) ²
Toluene	-	85
Ethylbenzene	-	70
Xylene (total)	-	105
Naphthalene	170	-
Benzo(a)pyrene	-	0.7
Arsenic	100	-
Chromium	190	-
Copper	190	-
Lead	1,100	-
Nickel	170	-
Zinc	400	-

(1) NEPM (2013) Schedule B1 Tables 1B(1)-Table 1B(5)

(2) NEPM (2013) Schedule B1 Table 1B(6)

8 INVESTIGATION RESULTS

8.1 SUBSURFACE CONDITIONS

Table 8.1 provides a description of the soil profile below the site.

Table 8.1 Subsurface profile

DEPTH	DESCRIPTION
0.0 mBGL to 0.1-0.5 mBGL	Fill, primarily silty sand and silty clay, loose, low plasticity, brown
0.1-0.5 mBGL to 0.6-1.0 mBGL	Primarily silty clays, silty sand or clayey sand, orange/brown gravelly sand, low plasticity, coarse, dry
0.6-1.0 mBGL to 1.5 mBGL	Sandstone, weathered to highly weathered, red/yellow, low to high strength, dry

Headspace analysis of VOCs was undertaken on all soil samples collected using a calibrated PID. PID readings ranged from 0.0 ppm to 0.2 ppm. Site photographs are provided in Appendix E and borelogs are provided in Appendix I.

8.2 ENVIRONMENTAL RESULTS

8.2.1 SOIL LABORATORY RESULTS

Samples of analytes tested did not exceed the adopted health-based criteria adopted for the site. One sample, from TP03 at 0.1 mBGL, exceeded the ESL for TRH C₁₆-C₃₄. Table 8.2 provides a summary of the number of primary samples analysed, analytes tested for and minimum/maximum constituent concentrations.

A more detailed summary tables of analytical results are provided in the tables in Appendix F, and laboratory reports are provided in Appendix G.

Table 8.2 Summary of soil results

NUMBER OF PRIMARY SAMPLES	ANALYTE	CONCENTRATION (mg/kg)	
		Minimum	Maximum
22	TRH F1	<10	<10
22	TRH F2	<50	63
22	TRH C ₁₆ -C ₃₄	<100	320
22	TRH C ₃₄ -C ₄₀	<100	120
22	Benzene	<0.2	<0.2
22	Toluene	<0.5	<0.5
22	Ethylbenzene	<0.5	<0.5
22	Xylene (total)	<0.5	<0.5
22	Naphthalene	<1	<1
22	PAHs (total)	<0.5	<0.5

NUMBER OF PRIMARY SAMPLES	ANALYTE	CONCENTRATION (mg/kg)	
		Minimum	Maximum
22	Benzo(a)pyrene TEQ	<0.5	<0.5
22	Arsenic	<2	9.5
22	Cadmium	<0.4	<1
22	Chromium	8.3	23
22	Copper	<5	25
22	Lead	9	23
22	Mercury	<0.1	<0.1
22	Nickel	<5	36
22	Zinc	<5	73
20	Asbestos in soil	Not detected	

9 QA/QC

9.1 DATA QUALITY INDICATORS (DQIS) FOR ANALYTICAL DATA

The DQIs for sampling techniques and laboratory analyses of collected representative soil and groundwater samples define the acceptable level of error required for this investigation. The DQOs have been assessed by reference to the attributes presented in Table 8.1.

Table 9.1 Data quality indicators

DQI	DESCRIPTION	APPLICATION
Completeness	The measure of the amount of usable data from a data collection activity. Valid chemical data are the values that have been identified as acceptable or validated.	The completeness goal was set at there being sufficient valid data generated during the study. Measurements made were judged to be valid measurements.
Comparability	The confidence that data may be considered to be equivalent for each sampling analytical event, i.e. the confidence with which one data set can be compared with another. Achieved through qualitative assessment of QA/QC procedures, using comparable field sampling, laboratory sample preparation and analytical procedures and reporting units.	The sampling was in general accordance with the sampling and analysis procedures and as per standard industry procedures. Each sample was analysed using identical methods for each analyte and laboratory practical quantitation limits (PQLs) were consistent over each laboratory batch. A check laboratory was used to provide data to make a comparative assessment of variability between laboratories.
Representativeness	The confidence that the data are representative of each media present on the site. Expresses the degree to which sample data accurately and precisely represents a characteristic of a population or an environmental condition. Controlled through selecting sampling locations that exemplify site conditions and obtaining suitable samples.	Consistent and repeatable sampling techniques and methods were utilised.

DQI	DESCRIPTION	APPLICATION
Precision	The quantitative measure of the variability (or reproducibility) of data. Expressed as RPDs, assessed by determining the RPDs between the original and duplicate samples tested. Validity of the data is questioned if the RPD limits are exceeded and upon further investigation a reason cannot be determined.	Work was conducted in accordance with WSP standard procedures. The precision of the data was assessed by calculating the RPDs of duplicate samples following AS 4482.1 (2005).
Accuracy	The quantitative measure of the closeness of reported data to the true values. Accuracy can be undermined by such factors as field contamination of samples, poor preservation or preparation techniques.	Accuracy was assessed by using equipment blanks and laboratory QA/QC analytical results (including laboratory control samples, spikes, and reference samples).

Table 9.2 QA/QC results

ITEM	OBJECTIVES MET
Environmental consultant	The environmental consultant maintains quality assurance systems certified to AS/NZS ISO 9001:2000. Qualified and experienced environmental scientists with 2 years' experience completed field works.
Procedures	All work was conducted in accordance with relevant statutory work health and safety (WHS) and environmental sampling guidelines, as well as standard company WHS and environmental field procedures. Standard field sampling sheets were used. Details recorded included WSP staff and contractors present, time on-/off-site, weather conditions, calibration records and comments.
Sampling	Collection of samples was undertaken by appropriately qualified and experienced personnel following WSP standard field procedures which are based on industry accepted standard practice. Chain of custody was used to ensure the integrity of samples from collection to receipt by the laboratory.
Field equipment	Equipment was serviced and calibrated as per the manufacturer requirements.
Equipment decontamination	Undertaken after each sampling episode where equipment used was not dedicated. Rinsate blanks to be below detection for the potential contaminants (one rinsate blank per day). Field sampling procedures conformed to WSP QA/QC protocols to prevent cross-contamination, preserve sample integrity, and allow for collection of a suitable data set from which to make technically sound and justifiable decisions with data of satisfactory usability. QA/QC sample results are presented in the tables in Appendix G.

ITEM	OBJECTIVES MET
Transportation	Samples were stored in chilled eskies on-site and during transport via courier to the laboratory. A chain of custody form was completed on-site and sent with the samples. The laboratory confirmed receipt of the samples and specified the condition on delivery and the scheduled analyses. Appropriate holding times were met. Trip blank samples were carried during field works (at a rate of one per sample batch) to assess contamination through field activities and transport. Results were below laboratory PQLs.
Field QA/QC	Two rinsate blanks were collected during the works. Both rinsate blanks were analysed for TRH, BTEXN, PAHs and heavy metals. All results were below detection. One trip blank was analysed for TRH C₆-C₁₀ and BTEXN compounds. All results were below detection. One trip spike was analysed for BTEX compounds, TRH C₆-C₁₀ and naphthalene. Recovery results were reported between 91% and 110%. This was considered acceptable. QA/QC sampling was undertaken to industry standard procedures including 1 in 20 blind duplicates (intra-laboratory) to the primary laboratory and 1 in 20 blind duplicates (inter-laboratory) to the secondary laboratory. Field and laboratory acceptable limits are between 30-50% RPD as stated by AS 4482.1-1997. Exceedances of the applied RPDs are as follows: — Arsenic in primary sample HA07_0.2 and intra-laboratory sample QA01 at 86% — Chromium in primary sample HA07_0.2 and inter-laboratory sample QA01 at 55%.
Laboratory analysis	Analysis was carried out by laboratories with NATA certification for the required analyses. Detection limits were sufficient to enable comparison against the appropriate guidelines. All PQLs were less than the adopted assessment criteria.
Acceptable limits for QA/QC samples	Primary laboratory QA/QC acceptance limits for recovery of surrogates, control samples are matrix spikes to be 70 to 130% for organics and 80 to 120% recovery for inorganics and waters. All method blanks to be less than PQL.
Reporting	Report generally complies with the NEPM (2013).

9.2 SUMMARY OF QA/QA RESULTS

WSP considers that the sample collection, documentation, handling, storage and transportation procedures utilised are of an acceptable standard and the analytical results provided by the laboratories are deemed reliable and complete, therefore the data are considered fit for purpose.

It is considered that the QA/QC procedures and results were acceptable and that the conclusions of the report have not been significantly affected by the sampling or analytical procedures. Based on the results of laboratory QA/QC samples and the sampling and handling procedures used for the collection and analysis of soil and groundwater samples, the data were considered representative and appropriate for use in this assessment.

10 DISCUSSION AND CONCLUSIONS

Concentrations of TRH C₁₆-C₃₄ were reported in some primary samples (HA03-0.1, HA03-0.9 and HA04-0.1) marginally above the PQL and accompanied by low PID readings. Concentrations were not considered to be significant and were generally below the adopted site criteria, although one result exceeded the ecological criteria.

All results for BTEXN and PAHs were below the laboratory PQLs. Concentrations of some heavy metals were reported in soil samples for the site, with results generally consistent between locations and were reported below the adopted site criteria.

No asbestos was observed in soil during the on-site work or detected by the laboratory in soil samples submitted for analysis.

The objectives of the PSI and DSI were to:

- assess the current contamination status of the site, with respect to soil contamination within the identified design footprint, to meet the requirements of the SSD
- assess the potential risks associated with contamination at the site (if identified), with respect to demonstrating the Site's suitability for proposed use in accordance with the SSD

The results of the investigation indicate the identified design footprint at the school is suitable for development and future use as a primary school under the SSD.

11 LIMITATIONS

This Report is provided by WSP Australia Pty Limited (WSP) for FTA (Client) in response to specific instructions from the Client and in accordance with WSP's proposal dated 23 May 2018 and agreement with the Client dated 23 May 2018 (Agreement).

PERMITTED PURPOSE

This Report is provided by WSP for the purpose described in the Agreement and no responsibility is accepted by WSP for the use of the Report in whole or in part, for any other purpose (Permitted Purpose).

QUALIFICATIONS AND ASSUMPTIONS

The services undertaken by WSP in preparing this Report were limited to those specifically detailed in the Report and are subject to the scope, qualifications, assumptions and limitations set out in the Report or otherwise communicated to the Client.

Except as otherwise stated in the Report and to the extent that statements, opinions, facts, conclusion and / or recommendations in the Report (Conclusions) are based in whole or in part on information provided by the Client and other parties identified in the report (Information), those Conclusions are based on assumptions by WSP of the reliability, adequacy, accuracy and completeness of the Information and have not been verified. WSP accepts no responsibility for the Information.

The Conclusions are reflective of the current Site conditions and cannot be regarded as absolute without further extensive intrusive investigations, outside the scope of the services set out in the Agreement and are indicative of the environmental condition of the Site at the time of preparing the Report. As a general principle, vertical and horizontal soil or groundwater conditions are not uniform. No monitoring, common or intrusive testing or sampling technique can eliminate the possibility that monitoring or testing results or samples taken, are not totally representative of soil and / or groundwater conditions encountered at the Site. It should also be recognised that Site conditions, including subsurface conditions can change with time due to the presence and concentration of contaminants, changing natural forces and man-made influences.

Within the limitations imposed by the scope of the services undertaken by WSP, the monitoring, testing (intrusive or otherwise), sampling for the preparation of this Report has been undertaken and performed in a professional manner in accordance with generally accepted practices, using a degree of skill and care ordinarily exercised by reputable environmental consultants under similar circumstances. No other warranty, expressed or implied, is made.

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12 REFERENCES

- Australian Standard AS4964, 2004, Method for Qualitative Identification of Asbestos in Bulk Samples
- CSIRO Australian Soil Resource Information System (http://www.asris.csiro.au/index_ie.html)
- The Department of Minerals and Energy, 1991, 1:100,000 Penrith Geological Map Sheet 9030
- National Environment Protection Council (NEPC), 2013, National Environment Protection (Assessment of Site Contamination) Amendment Measure 2013 (No. 1) (NEPM)
- NSW DEC (2006) Guidelines for the NSW Site Auditor Scheme (2nd Edition)
- NSW EPA (1995) Sampling Design Guidelines
- NSW EPA (1997) Guidelines for Consultants Reporting on Contaminated Sites
- NSW EPA (2009) Waste Classification Guidelines Part 1: Classifying Waste.
- NSW EPA Contaminated land record database (<http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx>)
- NSW EPA Protection of the Environment Operations Act 1997 public register (<http://www.epa.nsw.gov.au/prpoeoapp/>)
- NSW Government Water Information website (<https://realtime.data.watarnsw.com.au/water.stm>)
- WA DoH, 2009, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia

APPENDIX A

FIGURES



PRELIMINARY



Legend
[Red outline] Site boundary

Map: PS110639_GIS_001_A1

Author: HartS



0 80 160
m
1:8,000

Source: © OpenStreetMap (and) contributors, CC-BY-SA
Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Coordinate system: GDA 1994 MGA Zone 56
Scale ratio correct when printed at A4



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Fulton Trotter Architects

Preliminary Site Investigation (PSI) and Detailed Site Investigation
Samuel Gilbert Public School, Ridgescrop Drive, Castle Hill, NSW
Figure 1
Site location

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PRELIMINARY



Map: PS110639_GIS_002_A1

Author: HartS



Coordinate system: GDA 1994 MGA Zone 56
Scale ratio correct when printed at A4

Date: 26/07/2018
Approved by: -

Source: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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Fulton Trotter Architects

Preliminary Site Investigation (PSI) and Detailed Site Investigation
Samuel Gilbert Public School, Ridgecrop Drive, Castle Hill, NSW

Figure 2
Sampling locations

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APPENDIX B

SECTION 10.7 CERTIFICATE





PLANNING CERTIFICATE UNDER SECTION 10.7 (2) & (5)

ENVIRONMENTAL PLANNING AND ASSESSMENT ACT 1979 AS AMENDED.

Certificate Number: **62463**
Reference: LIR 235:119055
Issue Date: 12 July 2018
Receipt No: 5759148
Fee Paid: \$ 133.00

ADDRESS: Samuel Gilbert Primary School, 1 Ridgecrop Drive, CASTLE HILL
NSW 2154
DESCRIPTION: Lot 1 DP 719671

The land is zoned:
Zone R2 Low Density Residential

The following prescribed matters apply to the land to which this certificate relates:

The Environmental Planning and Assessment Amendment Act 1997 commenced operation on 1 July 1998. As a consequence of this Act, the information contained in this certificate needs to be read in conjunction with the provisions of the Environmental Planning and Assessment Regulation 2000.

PLEASE NOTE: THIS CERTIFICATE IS AUTOMATICALLY GENERATED. IT MAY CONTAIN EXCESSIVE SPACES AND/OR BLANK PAGES.

THIS CERTIFICATE IS DIRECTED TO THE FOLLOWING MATTERS
PRESCRIBED UNDER SECTION 10.7 (2) OF THE ABOVE ACT.

1. Names of relevant planning instruments and DCPs

- (1) The name of each environmental planning instrument that applies to the carrying out of development on the land.

(A) **Local Environmental Plans**

The Hills Local Environmental Plan 2012, as amended, applies to all land in the Shire unless otherwise stated in this certificate.

State Environmental Planning Policies

SEPP No.19 - Bushland In Urban Areas
 SEPP No.21 - Caravan Parks
 SEPP No.30 - Intensive Agriculture
 SEPP No.33 - Hazardous And Offensive Development
 SEPP No.50 - Canal Estate Development
 SEPP No.55 - Remediation Of Land
 SEPP No.62 - Sustainable Aquaculture
 SEPP No.64 - Advertising And Signage
 SEPP No.65 - Design Quality Of Residential Apartment Development
 SEPP No.70 - Affordable Housing (Revised Schemes)
 SEPP (Building Sustainability Index: Basix) 2004
 SEPP (State Significant Precincts) 2005
 SEPP (Mining, Petroleum Production And Extractive Industries) 2007
 SEPP (Miscellaneous Consent Provisions) 2007
 SEPP (Infrastructure) 2007
 SEPP (Exempt and Complying Development Codes) 2008
 SEPP (Affordable Rental Housing) 2009
 SEPP (State and Regional Development) 2011

SEPP (Vegetation in Non-Rural Areas) 2017
 SEPP (Educational Establishments and Child Care Facilities) 2017

Sydney Regional Environmental Plan No. 9 Extractive Industry (No.2 - 1995)
 Sydney Regional Environmental Plan No. 20 Hawkesbury – Nepean River
 (No.2 – 1997)

The following SEPP's may apply to the land. Please refer to '**Land to which Policy applies**' for each individual SEPP.

SEPP (Housing For Seniors Or People With A Disability) 2004

- (2) The name of each **proposed environmental planning instrument** that will apply to the carrying out of development on the land and that is or has been the subject of community consultation or on public exhibition under the Act (unless the Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

(A) **Proposed Local Environmental Plans**

Proposed The Hills Local Environmental Plan 2012 (Amendment No.) applies to this land.

Refer Attachment 1(2)(A)

(B) **Proposed State Environmental Planning Policies**

Draft Primary Production and Rural Development State Environmental Planning Policy and planning reforms
Draft State Environmental Planning Policy (Environment)
Draft Remediation of Land State Environmental Planning Policy

- (3) The name of each development control plan that applies to the carrying out of development on the land.

The Hills Development Control Plan 2012

Note: the land is within The Hills Development Control Plan 2012 Part B map sheet. Refer Council's website www.thehills.nsw.gov.au to view the map sheet.

- (4) In this clause, proposed environmental planning instrument includes a planning proposal for a LEP or a draft environmental planning instrument.

2. Zoning and land use under relevant LEPs

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a SEPP or proposed SEPP).

- (A) The Hills Local Environmental Plan 2012 applies to the land unless otherwise stated in this certificate and identifies the land to be:

Zone R2 Low Density Residential

- (B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions

regarding Exempt Development

- (C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions
regarding Complying Development

- (D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

- (E) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

- (F) Whether the land includes or comprises critical habitat?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

- (G) Whether the land is in a conservation area (however described)?

The Hills Local Environmental Plan 2012?

NO

Any Other Planning Proposal?

NO

- (H) Whether an item of environmental heritage (however described) is situated on the land?

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

2A. Zoning and land use under State Environmental Planning Policy (Sydney Region Growth Centres) 2006

To the extent that the land is within any zone (however described) under:

- (a) Part 3 of the *State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (the 2006 SEPP)*, or
 - (b) a Precinct Plan (within the meaning of the 2006 SEPP), or
 - (c) a proposed Precinct Plan that is or has been the subject of community consultation or on public exhibition under the ACT.
- (A) State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan) does not apply.

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) applies to the land unless otherwise stated in this certificate and identifies the land to be:

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan) does not apply.

Note: This precinct plan applies to land within the Box Hill Precinct or Box Hill Industrial Precinct.

- (B) The purposes for which the instrument provides that development may be carried out within the zone without development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Exempt Development.

- (C) The purposes for which the instrument provides that development may not be carried out within the zone except with development consent:

Refer Attachment 2(B)

Also refer to the applicable instrument for provisions regarding Complying Development

- (D) The purposes for which the instrument provides that development is prohibited in the zone:

Refer Attachment 2(B)

- (E) Whether any development standards applying to the land fix minimum land dimensions for the erection of a dwelling-house on the land and, if so, the minimum land dimensions so fixed?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

Any amendments to State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

Any amendments to State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (F) Whether the land includes or comprises critical habitat?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (G) Whether the land is in a conservation area (however described)?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

- (H) Whether an item of environmental heritage (however described) is situated on the land?

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 2 North Kellyville Precinct Plan)?

NO

State Environmental Planning Policy (Sydney Region Growth Centres) 2006 (Appendix 11 The Hills Growth Centre Precincts Plan)?

NO

3. Complying Development

- (1) The extent to which the land is land on which complying development may be carried out under each of the codes for complying development because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.
- (2) The extent to which complying development may not be carried out on that land because of the provisions of clauses 1.17A (1) (c) to (e), (2), (3) and (4), 1.18 (1) (c3) and 1.19 of that Policy and the reasons why it may not be carried out under those clauses.
- (3) If the council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land, a statement that a restriction applies to the land, but it may not apply to all of the land, and that council does not have sufficient information to ascertain the extent to which complying development may or may not be carried out on the land.

Housing Code and Rural Housing Code

Complying Development under the Housing Code and Rural Housing Code **may be** carried out on the land.

Housing Alterations Code and General Development Code
Complying Development under the Housing Alterations Code and General Development Code **may be** carried out on the land.

Commercial and Industrial (New Buildings and Additions) Code
Complying Development under the Commercial and Industrial (New Buildings and Additions) Code **may be** carried out on the land.

Commercial and Industrial Alterations, Container Recycling Facilities, Subdivision, Demolition and Fire Safety Codes
Complying Development under the Commercial and Industrial Alterations, Container Recycling Facilities, Subdivision, Demolition and Fire Safety Codes **may be** carried out on the land.

Note: Where reference is made to an applicable map, this information can be sourced from the following websites:

The Hills Local Environmental Plan 2012 - www.thehills.nsw.gov.au
State Environmental Planning Policy (Sydney Region Growth Centres) 2006
(Appendix 2 North Kellyville Precinct) or (Appendix 11 The Hills Growth

Centre Precincts Plan) – <http://www.planning.nsw.gov.au/Plans-for-your-area/Priority-Growth-Areas-and-Precincts/North-West-Priority-Growth-Area>

4, 4A (Repealed)

4B. Annual charges under Local Government Act 1993 for coastal protection services that relate to existing coastal protection works

Whether the owner (or any previous owner) of the land has consented in writing to the land being subject to annual charges under section 496B of the Local Government Act 1993 for coastal protection services that relate to existing coastal protection works (within the meaning of section 553B of that Act).

NO

Note. "Existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the Local Government Act 1993.

5. Mine subsidence

Whether or not the land is proclaimed to be a mine subsidence district within the meaning of section 15 of the Mine Subsidence Compensation Act 1961?

NO

6. Road widening and road realignment

Whether or not the land is affected by any road widening or road realignment under -

- (A) Division 2 of Part 3 of the Roads Act 1993; or

NO

- (B) any environmental planning instrument; or

NO

- (C) any resolution of council?

- a) The Hills Development Control Plan 2012?

NO

- b) Any other resolution of council?

NO

7. Council and other public authority policies on hazard risk restrictions

Whether or not the land is affected by a policy:

- (a) adopted by council, or
- (b) adopted by any other public authority and notified to the council for the express purpose of its adoption by that authority being referred to in planning certificates issued by the council,

that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding)?

Council's policies on hazard risk restrictions are as follows:

(i) Landslip

- a) By The Hills Local Environmental Plan 2012 zoning?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

- b) By The Hills Local Environmental Plan 2012 local provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

- c) By The Hills Development Control Plan 2012 provision?

NO

No resolution has been adopted but attention is directed to the fact that there are areas within the Shire liable to landslip.

(ii) Bushfire

YES

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by bushfire. That question is answered in Section 11 of this certificate.

Council has adopted the NSW Rural Fire Service Guidelines entitled 'Planning for Bushfire Protection 2006'. Development subject to bushfire risk will be required to address the requirements in these guidelines and can be downloaded off the RFS web site www.rfs.nsw.gov.au

The Development Control Plan may also contain provisions for development on Bushfire Prone Land and Bushfire Hazard Management. Refer Part 1(3) of this certificate for the applicable Development Control Plan.

(iii) Tidal inundation

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by tidal inundation.

(iv) Subsidence

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by subsidence.

(v) Acid sulphate soils

NO

(vi) Land contamination

NO

Please note this is a statement of Council policy only and NOT a statement on whether or not the property is affected by contamination or potential contamination.

(vii) Any other risk

NO

7A. Flood related development controls information

- (1) Whether or not development on that land or part of the land for the purposes of dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) is subject to flood related development controls?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (2) Whether or not development on that land or part of the land for any other purpose is subject to flood related development controls?

NO

Please note this is a statement of flood related development controls and is NOT a statement on whether or not the property is subject to flooding.

- (3) Words and expressions in this clause have the same meanings as in the standard instrument set out in the Standard Instrument (Local Environmental Plans) Order 2006.

8. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in clause 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in section 27 of the Act.

The Hills Local Environmental Plan 2012?

NO

Any other Planning Proposal?

NO

State Environmental Planning Policy?

NO

Proposed State Environmental Planning Policy?

NO

9. Contributions plans

The name of each contributions plan applying to the land:

THE HILLS SECTION 94A**9A. Biodiversity Certified Land**

Whether the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*?

NO

Note: Biodiversity certified land includes land certified under Part 7AA of the *Threatened Species Conservation Act 1995* that is taken to be certified under Part 8 of the *Biodiversity Conservation Act 2016*.

10. Biodiversity stewardship sites

Whether the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016* (but only if the council has been notified of the existence of the agreement by the Chief Executive of the Office of Environment and Heritage)?

NO

Note: Biodiversity stewardship agreements include biobanking agreements under Part 7A of the Threatened Species Conservation Act 1995 that are taken to be biodiversity stewardship agreements under Part 5 of the Biodiversity Conservation Act 2016.

10A. Native vegetation clearing set asides

Whether the land contains a set aside area under section 60ZC of the Local Land Services Act 2013 (but only if the council has been notified of the existence of the set aside area by Local Land Services or it is registered in the public register under that section)?

NO

11. Bush fire prone land

Has the land been identified as bush fire prone land?

YES

The land is identified on Council's certified Bush Fire Prone Land map as being partly or wholly bush fire prone land. For details refer to the Bush Fire Prone Land map that can be viewed on Council's website at www.thehills.nsw.gov.au

12. Property vegetation plans

Has the council been notified that a property vegetation plan approved under Part 4 of the Native Vegetation Act 2003 (and that continues in force) applies to this land?

NO

13. Orders under Trees (Disputes Between Neighbours) Act 2006

Whether an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on this land (but only if the council has been notified of the order)?

NO

14. Directions under Part 3A

Whether there is a direction by the Minister in force under section 75P (2)(c1) of the Act that a provision of an environmental planning instrument prohibiting or restricting the carrying out of a project or a stage of a project on the land under Part 4 of the Act does not have effect?

NO

15. Site compatibility certificates and conditions for seniors housing

(a) Whether there is a current site compatibility certificate (seniors housing) of which council is aware, issued under State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 in respect of proposed development on the land?

NO

(b) Whether there are any terms of a kind referred to in clause 18(2) of *State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004* that have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land?

NO

16. Site compatibility certificates for infrastructure, schools or TAFE establishments

Whether there is a valid site compatibility certificate (infrastructure) or site compatibility certificate (schools or TAFE establishments), of which the council is aware, in respect of proposed development on the land?

NO

17. Site compatibility certificates and conditions for affordable rental housing

(1) Whether there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land?

NO

(2) Whether there are any terms of a kind referred to in clause 17(1) or 38(1) of *State Environmental Planning Policy (Affordable Rental Housing) 2009* that have been imposed as a condition of consent to a development application in respect of the land?

NO

18. Paper subdivision information

(1) The name of any development plan adopted by a relevant authority that applies to the land or that is proposed to be subject to a consent ballot.

NO DEVELOPMENT PLAN APPLIES

(2) The date of any subdivision order that applies to the land.

NO SUBDIVISION ORDER APPLIES

(3) Words and expressions used in this clause have the same meaning as they have in Part 16C of this Regulation.

19. Site verification certificates

Whether there is a current site verification certificate, of which the council is aware, in respect of the land?

NO

Note. A site verification certificate sets out the Secretary's opinion as to whether the land concerned is or is not biophysical strategic agricultural land

or critical industry cluster land - see Division 3 of Part 4AA of State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

20. Loose-fill asbestos insulation

Does the land include any residential premises (within the meaning of Division 1A of Part 8 of the Home Building Act 1989) that is listed on the Loose-Fill Asbestos Insulation Register that is required to be maintained under that Division?

Council has **not** been notified by NSW Fair Trading that the land includes any residential premises that are listed on the register. Refer to the NSW Fair Trading website at www.fairtrading.nsw.gov.au to confirm that the land is not listed on this register.

Note: There is potential for loose-fill asbestos insulation in residential premises that are not listed on the Register. Contact NSW Fair Trading for further information.

21. Affected building notices and building product rectification orders

(1) Whether there is any affected building notice of which the council is aware that is in force in respect of the land?

NO

(2) (a) Whether there is any building product rectification order of which the council is aware that is in force in respect of the land and has not been fully complied with?

NO

(b) Whether any notice of intention to make a building product rectification order of which the council is aware has been given in respect of the land and is outstanding?

NO

(3) In this clause:

affected building notice has the same meaning as in Part 4 of the *Building Products (Safety) Act 2017*.

building product rectification order has the same meaning as in the *Building Products (Safety) Act 2017*.

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

(a) that the land to which the certificate relates is significantly contaminated land within the meaning of that Act – if the land (or part of the land) is significantly contaminated land at the date when the certificate is issued,

NO

(b) that the land to which the certificate relates is subject to a management order within the meaning of that Act – if it is subject to such an order at the date when the certificate is issued,

NO

(c) that the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of that Act – if it is the subject of such an approved proposal at the date when the certificate is issued,

NO

(d) that the land to which the certificate relates is subject to an ongoing maintenance order within the meaning of the Act – if it is subject to such an order at the date when the certificate is issued,

NO

(e) that the land to which the certificate relates is the subject of a site audit statement within the meaning of the Act – if a copy of such a statement has been provided at any time to the local authority issuing the certificate.

NO

**THIS PART IS DIRECTED TO THE FOLLOWING MATTERS
PRESCRIBED UNDER SECTION 10.7 (5) OF THE ABOVE ACT**

NOTE: "When information pursuant to Section 10.7 (5) is requested the council is under no obligation to furnish any of the information supplied herein pursuant to that Section. Council draws your attention to Section 10.7 (6), which states that a council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this certificate."

- A.** Whether there are any provisions applying to the land that control the management of trees and bushland?

YES

Part C Section 3 of The Hills Development Control Plan 2012 contain provisions for the control and management of actions in respect of trees and bushland.

- B.** Does the land contain a foreshore area as identified on The Hills Local Environmental Plan 2012 Foreshore Building Line map?

NO

- C.** Under the Protection of the Environment Operations Act 1997, is the property subject to a listing on the public register maintained by council with respect to an environmental notice or civil proceedings in the Land and Environment Court, or a prosecution under this Act?

NO

- D.** Is the land affected by any special provisions of Sydney Regional Environmental Plan No 9 – Extractive Industry (No 2 – 1995)?

NO

- E.** Is the land affected by a restricted development area as identified under The Hills Development Control Plan 2012?

NO

- F.** Is the land within an area where a Special Infrastructure Contribution, as determined by the Minister for Planning and Infrastructure, applies?

NO

- G.** Is the land in the vicinity of a heritage item or heritage conservation area as described in The Hills Local Environmental Plan 2012 **OR** State Environmental Planning Policy (Sydney Region Growth Centres) 2006?

NO

- H.** Whether Council has adopted a Voluntary Planning Agreement within the meaning of S93F of the Environmental Planning and Assessment Act, 1979, as amended, in relation to the land?

NO

- I.** Is the land within or adjacent to the Sydney Metro Northwest as identified on the maps prepared by Transport NSW?

NO

- J.** Does the land contain a proposed road as identified within a Development Control Plan under State Environmental Planning Policy (Sydney Region Growth Centres) 2006?

NO

- K.** Has Council been notified by NSW Land and Property Information that the land is affected by a plan of acquisition for railway purposes (Sydney Metro Northwest)?

NO

THE HILLS SHIRE COUNCIL

MICHAEL EDGAR
GENERAL MANAGER

Per: 

PLEASE NOTE: COUNCIL RETAINS THE ELECTRONIC ORIGINAL OF THIS CERTIFICATE. WHERE THIS CERTIFICATE REFERS TO INFORMATION DISPLAYED ON COUNCIL'S WEBSITE OR TO ANY EXTERNAL WEBSITE, IT REFERS TO INFORMATION DISPLAYED ON THE WEBSITE ON THE DATE THIS CERTIFICATE IS ISSUED.

ATTACHMENT 1(2)(A)**PLANNING PROPOSAL 1/2017/PLP - REMOVES CITY OF PARRAMATTA FROM THE HILLS SHIRE COUNCIL & CREATES LEP 2017**

As a result of the State-wide Council Boundary Review process in May 2016, the Hills Shire Council area was reduced, with part of The Hills Shire becoming part of the new City of Parramatta Council Local Government Area.

This means that LEP 2012 is currently being administered by two Councils. The planning proposal seeks an administrative amendment to The Hills Local Environmental Plan 2012 to:

1. Create a new local environmental plan and associated maps which will be known as *The Hills Local Environmental Plan 2017* and which will apply to land within The Hills Local Government Area.
2. Amend *The Hills Local Environmental Plan 2012* and associated maps so that it only applies to land formerly in The Hills Local Government Area, now in the City of Parramatta. This instrument will continue to be known as *The Hills Local Environmental Plan 2012*.

The separation of LEP 2012 into two plans will allow both Councils to manage the ongoing planning framework independently. The proposal is an administrative amendment only and there is no proposal to change the planning controls that currently apply to land within The Hills Shire or the City of Parramatta.

Delegation for making of the LEP 2012 has not been issued to Council under the Gateway Determination.

For further information please contact Council's Duty Planner on 9843 0469.

The above details are in keeping with the exhibited planning proposal. Please note that changes to the planning proposal may be made post exhibition. The current status and details of the planning proposal can be viewed on Council's website www.thehills.nsw.gov.au under the 'Building & Planning' menu bar, then 'Application Tracking'.

ATTACHMENT 2(B)**Zone R2 Low Density Residential****1 Objectives of zone**

- To provide for the housing needs of the community within a low density residential environment.
- To enable other land uses that provide facilities or services to meet the day to day needs of residents.
- To maintain the existing low density residential character of the area.

2 Permitted without consent

Home business; Home occupations

3 Permitted with consent

Bed and breakfast accommodation; Boarding houses; Building identification signs; Business identification signs; Centre-based child care facilities; Dual occupancies; Dwelling houses; Group homes; Health consulting rooms; Home-based child care; Respite day care centres; Roads; Any other development not specified in item 2 and 4

4 Prohibited

Agriculture; Air transport facilities; Airstrips; Amusement centres; Animal boarding or training establishments; Boat building and repair facilities; Boat launching ramps; Boat sheds; Camping grounds; Car parks; Caravan parks; Cemeteries; Charter and tourism boating facilities; Commercial premises; Correctional centres; Crematoria; Depots; Eco-tourist facilities; Electricity generating works; Entertainment facilities; Environmental facilities; Extractive industries; Farm buildings; Forestry; Freight transport facilities; Function centres; Health services facilities; Heavy industrial storage establishments; Helipads; Highway service centres; Home occupations (sex services); Industrial retail outlets; Industrial training facilities; Industries; Information and education facilities; Jetties; Marinas; Mooring pens; Moorings; Mortuaries; Open cut mining; Passenger transport facilities; Port facilities; Public administration buildings; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Registered clubs; Research stations; Residential accommodation; Restricted premises; Rural industries; Service stations; Sewerage systems; Sex services premises; Signage; Storage premises; Tourist and visitor accommodation; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Veterinary hospitals; Warehouse or distribution centres; Waste or resource management facilities; Water recreation structures; Water supply systems; Wharf or boating facilities; Wholesale supplies.

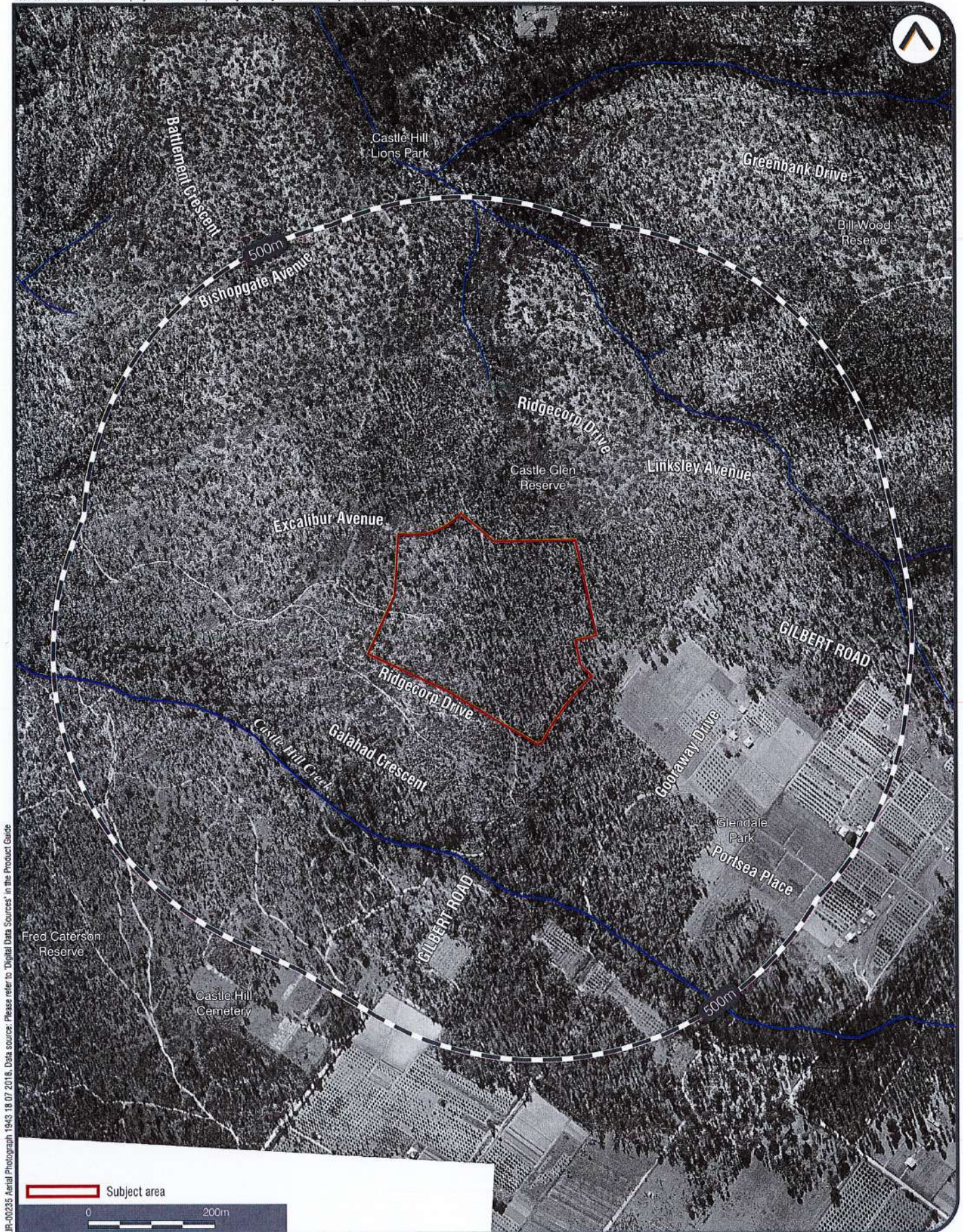
NOTE: This land use table should be read in conjunction with the Dictionary at the end of The Hills LEP 2012 which defines words and expressions for the purpose of the plan.

NOTE: Activities permitted without development consent are still subject to other provisions in Environmental Planning Instruments and/or Acts.

APPENDIX C

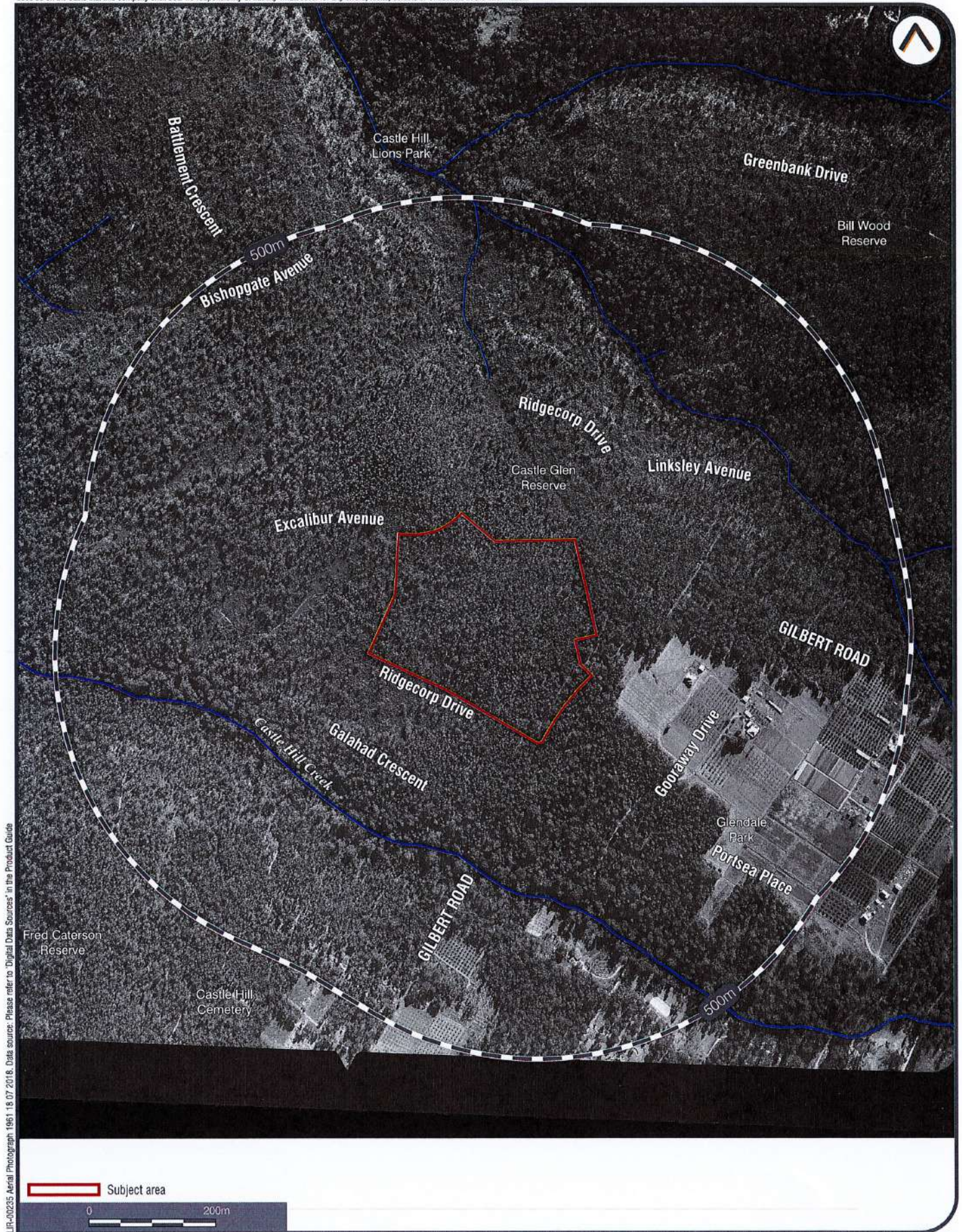
HISTORICAL AERIAL PHOTOGRAPHS





LIH-00235 Aerial Photograph 1943 18 07 2016. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1943



HISTORIC AERIAL PHOTOGRAPH - 1961



LIR-00235 Aerial Photograph 1970 18 07 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1970

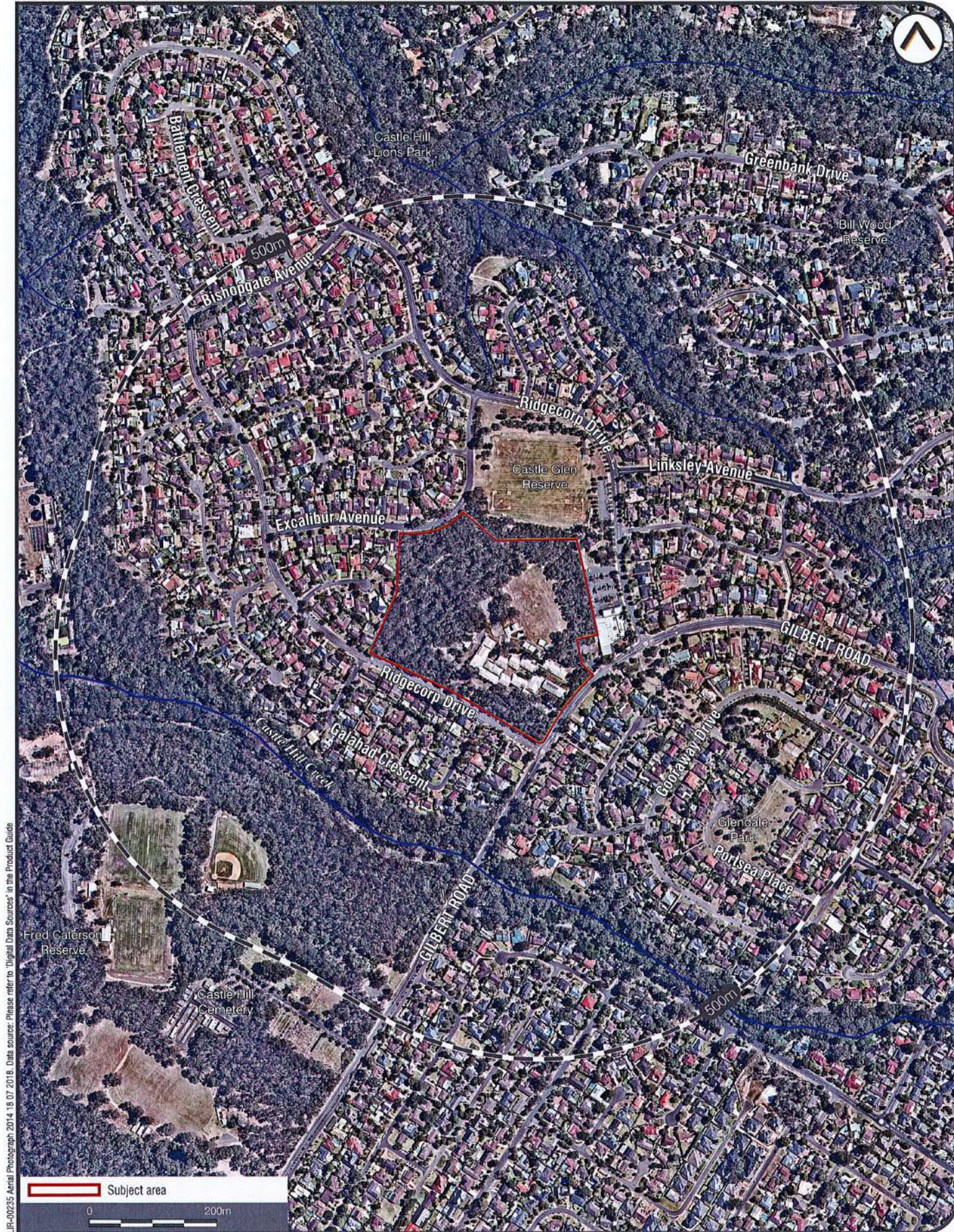


LIR-00235 Aerial Photograph 1986 18 07 2016. Data source: Please refer to 'Digital Data Sources' in the Product Guide

HISTORIC AERIAL PHOTOGRAPH - 1986



HISTORIC AERIAL PHOTOGRAPH - 1991



LRI-00235 Aerial Photograph 2014 18 07 2018. Data source: Please refer to 'Digital Data Sources' in the Product Guide

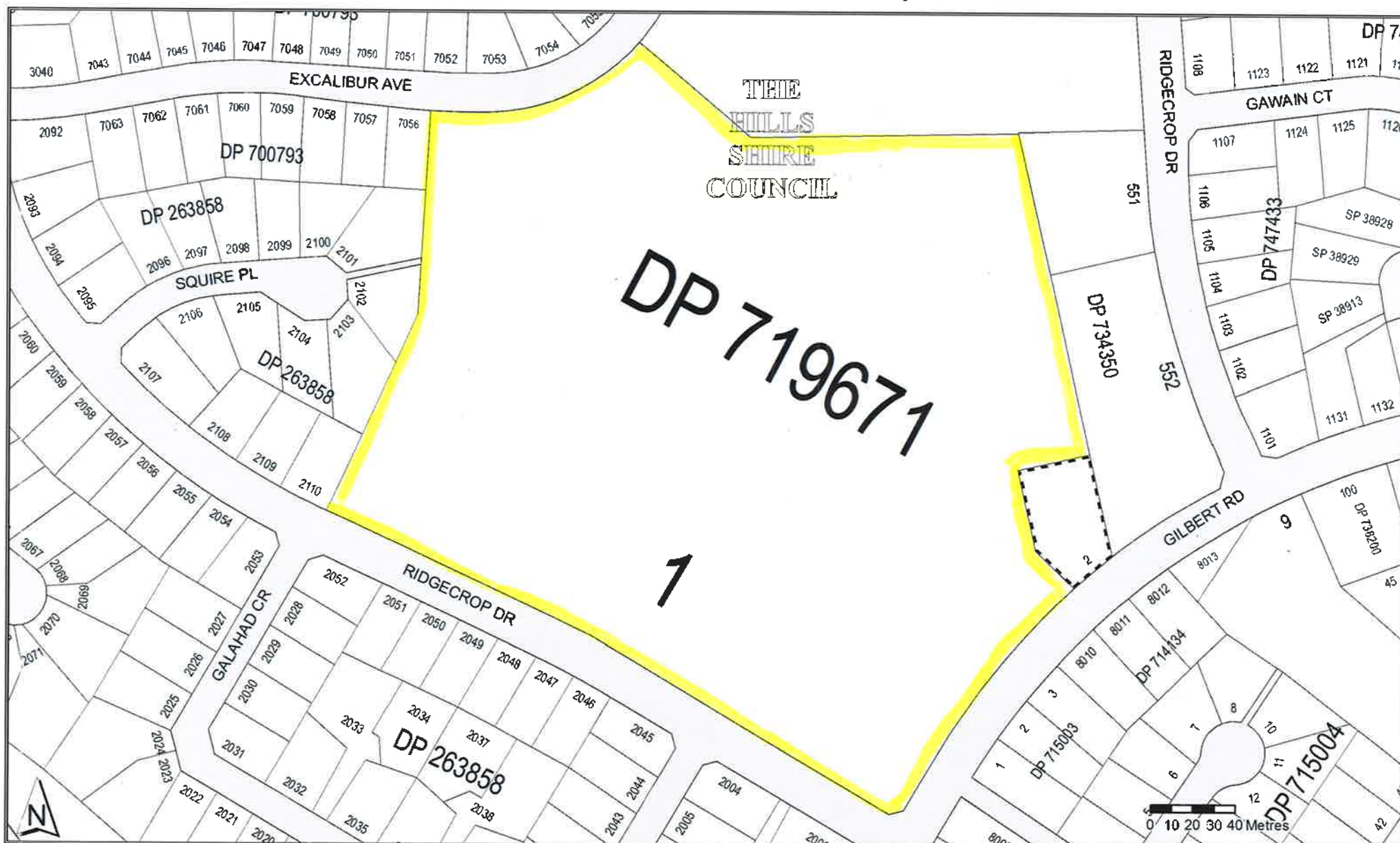
HISTORIC AERIAL PHOTOGRAPH - 2014



APPENDIX D

HISTORICAL CERTIFICATES OF TITLE





CERTIFICATE OF TITLE

PROPERTY ACT, 1900



11784013

NEW SOUTH WALES

Appln. No. 27002

Vol. **11784** Fol. **13**

Prior Title Vol. 4642 Fol. 186

CANCELLED

Edition issued 24-2-1972

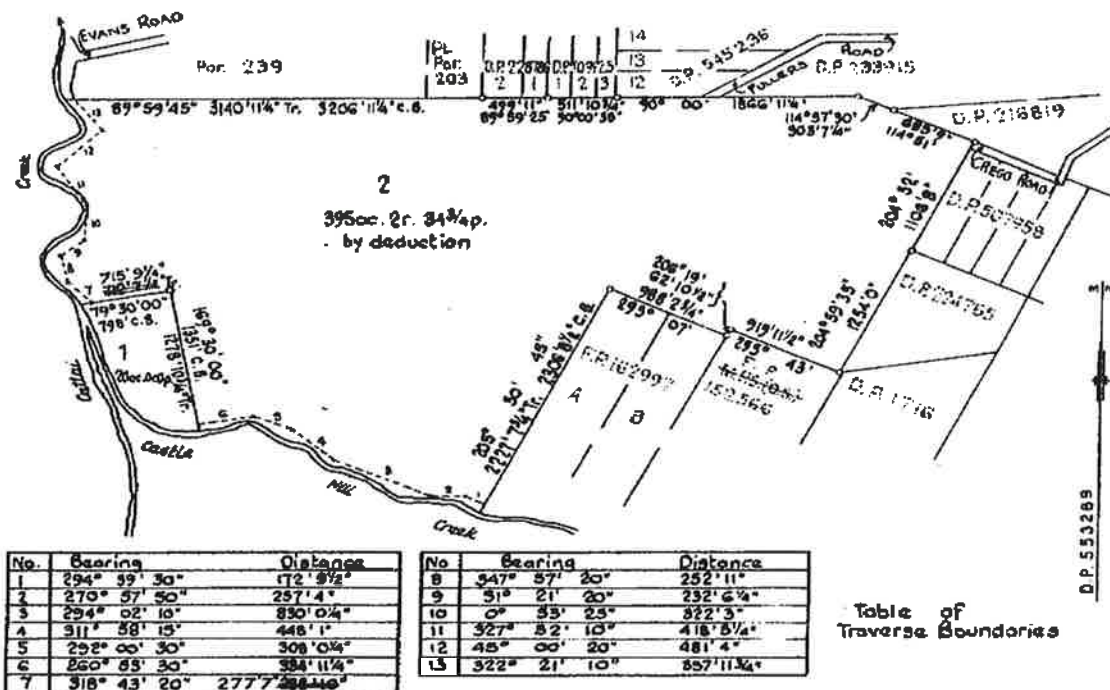


I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Jawatson
 Registrar General.



PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 553269 at Glenhaven in the Shire of Baulkham Hills Parish of Castle Hill and County of Cumberland being part of Portion 147 granted to John Terry Hughes on 19-7-1838.

FIRST SCHEDULE

HAGEN INVESTMENTS PTY. LIMITED.

SECOND SCHEDULE

- Reservations and conditions, if any, contained in the Crown Grant above referred to.
- The registered proprietor holds subject to Section 604 Local Government Act, 1919.
- Right of Way created by Transfer No.C261921 appurtenant to the land above described affecting the piece of land shown as "site of proposed right of way 66 feet wide" in F.P.185185.
- Mortgage No.M193846 to The Commercial Bank of Australia Limited. Entered 19-3-1971.

Jawatson
 Registrar General.

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

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

REGISTERED PROPRIETOR

~~This deed is cancelled as to~~

New Certificates of Title have issued on 9-10-1972

for you in Deported Plan No. 557319 as follows:

lots 21-22 Vol. 11945 Fol. 126-127 respectively

J. J. J. J.
REGISTRAR GENERAL

INSTRUMENT	
NATURE	NUMBER

NATURE	NUMBER	DATE
--------	--------	------

PARTICULARS

ENTERED

Signature of
Registrar General

CANCELLATION

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

NEW SOUTH WALES



CERTIFICATE OF TITLE

PROPERTY ACT, 1900



11945127

Appln.No.27002

Prior Title Vol.11784 Fol.13

Vol. **11945** Fol. **127**

CANCELLED

Edition issued 9-10-1972.

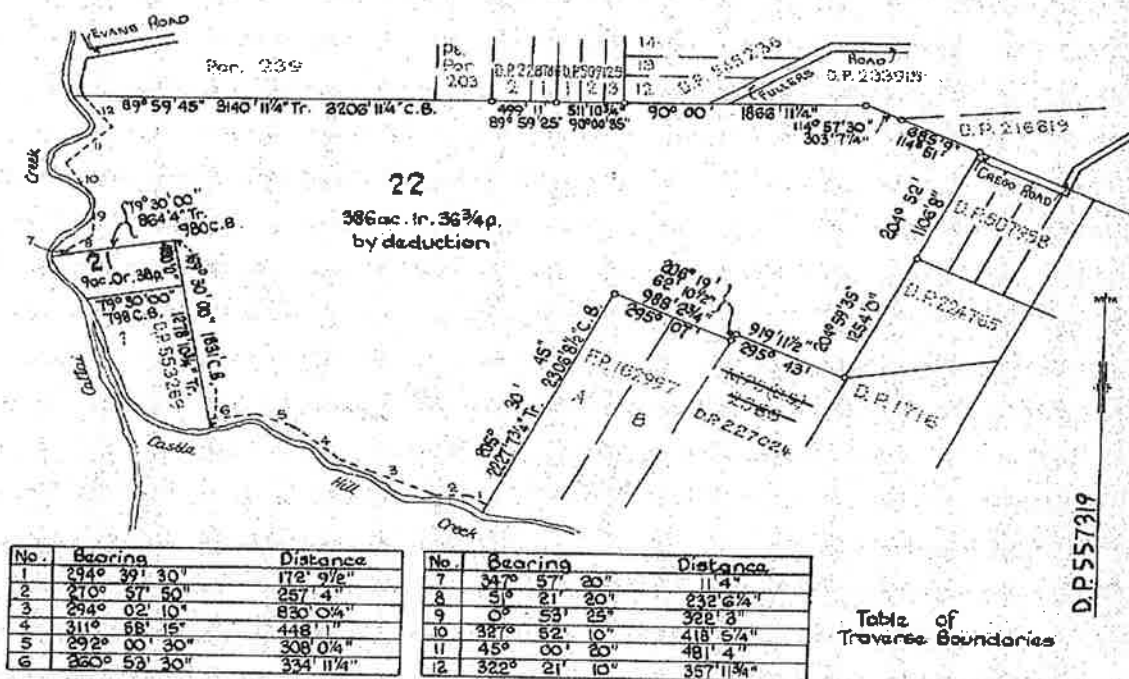


I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Lawton
 Registrar General.



PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 22 in Deposited Plan 557319 at Glenhaven in the Shire of Baulkham Hills Parish of Castle Hill and County of Cumberland being part of Portion 147 granted to John Terry Hughes on 19-7-1838.

FIRST SCHEDULE

HAGEN INVESTMENTS PTY.LIMITED.

SECOND SCHEDULE

- Reservations and conditions, if any, contained in the Crown Grant above referred to.
- The registered proprietor holds subject to Section 604 Local Government Act 1919.
- Right of Way created by Transfer No.C261921 appurtenant to the land above described affecting the piece of land shown as "Site of Proposed Right of Way 66 feet wide" in Filed Plan 185185.
- Mortgage No.M193846 to The Commercial Bank of Australia Limited. Entered 19-3-1971.

Lawton
 Registrar General

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

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE.

DP58 3958

CTII-6 79

DP 60359
~ 12/21

DP 60359
~ 12/21

DP 60359
~ 12/21

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

NEW SOUTH WALES

CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900

Vol. 13910 Fol. 185

Appln. No.27002

Prior Title Vol.11945 Fol.127

EDITION ISSUED

24 7 1979



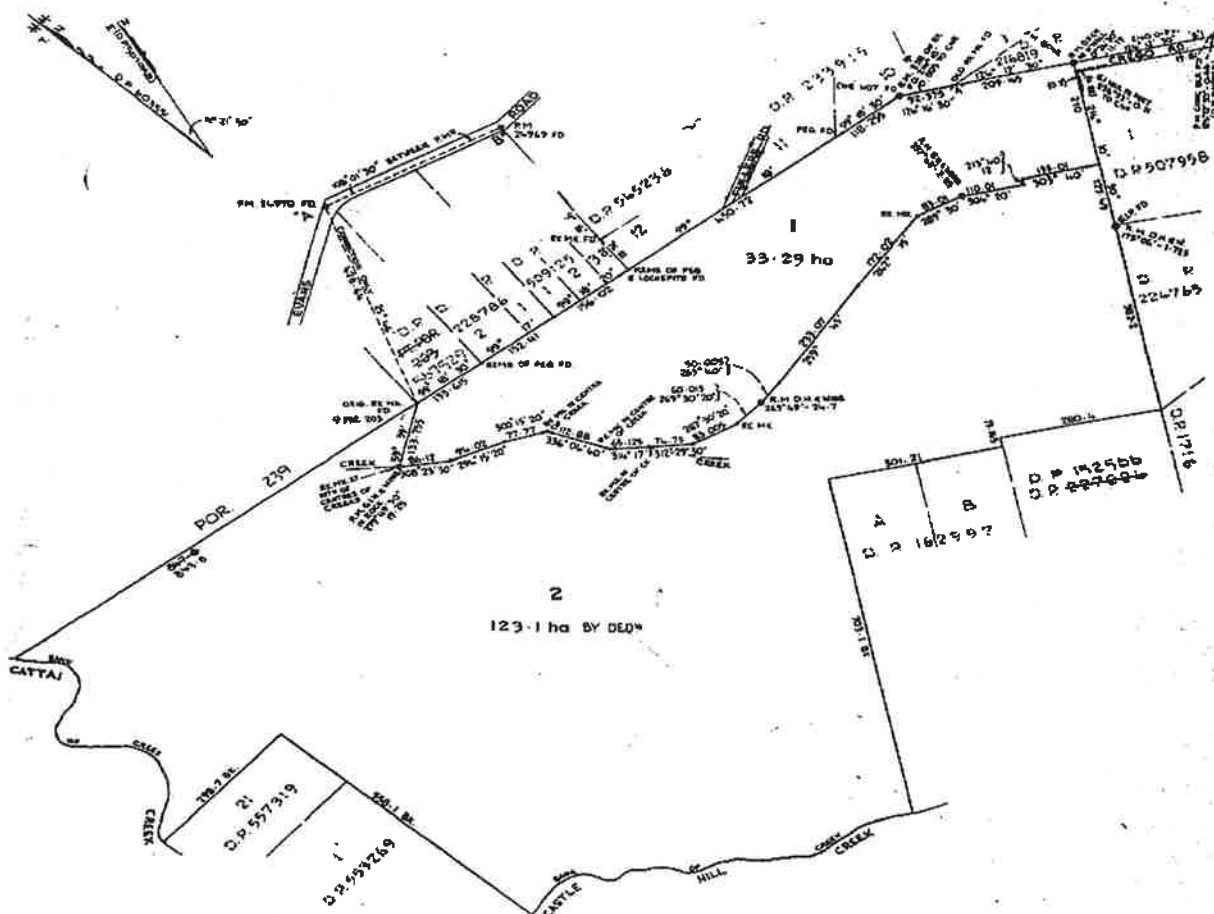
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 2 in Deposited Plan 603551 at Glenhaven in the Shire of Baulkham Hills Parish of Castle Hill and County of Cumberland being part of Portion 147 granted to John Terry Hughes on 19-7-1838.

FIRST SCHEDULE

HAGEN INVESTMENTS PTY LIMITED.

SECOND SCHEDULE

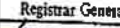
1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. The registered proprietors hold subject to section 604 Local Government Act, 1919
3. C261921 Right of way appurtenant to the land above described affecting the land shown so burdened in Deposited Plan 603551.
4. M193846 Mortgage to The Commercial Bank of Australia Limited. Discharged R376484

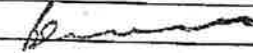
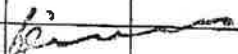
NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE.

REGISTERED PROPRIETOR

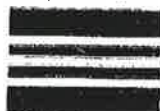
REGISTERED PROPRIETOR		INSTRUMENT		REGISTERED	Signature of Registrar General
NATURE	NUMBER				
Land Commission of New South Wales.		Transfer	R376485	2-10-1979	
part					
28-3-1983					
This deed is cancelled as to	Part of Road				
New Certificates of Title have issued on	31-3-1983				
for loss in Deposited Plan No. 263857					
as follows:					
lots 1001 to 1006 Vol. 15024 Fol. 164 to 166					
for loss in Deposited Plan No. 263858					
as follows:					
lots 1001 to 1006 Vol. 15026 Fol. 94 to 108					
for loss in Deposited Plan No. 263859					
as follows:					
lots 1001 to 1006 Vol. 15027 Fol. 1 to 12					

	
REGISTRAR GENERAL	
	
REGISTRAR GENERAL	
	
REGISTRAR GENERAL	

SECOND SCHEDULE (continued)					
INSTRUMENT		PARTICULARS	REGISTERED	Signature of Registrar General	CANCELLATION
NATURE	NUMBER				
	DP 263858	Interests created pursuant to Section 88B Conveyancing Act, 1919, by the registration of Deposited Plan. 263858			
	DP 263857	Interests created pursuant to Section 88B Conveyancing Act, 1919, by the registration of Deposited Plan. 263857	19.1.1983	<i>[Signature]</i>	This deed is cancelled as to New Certificates of Title have for lots in Deposited Plan No.
T420795	Application. The registered proprietor holds subject to Section 14(A) of the Land Commission Act, 1976 as regards Lots 2001 to 2110 inclusive in D.P.263858. Registered 10-3-1983.		19.1.1983	<i>[Signature]</i>	Lots 2001 to 3041 Vol. 15027
T422418	Application. The registered proprietor holds subject to Section 14(A) of the Land Commission Act, 1976 as regards Lots 1001 to 1093 inclusive in D.P.263857. Registered 10-3-1983.			<i>[Signature]</i>	
T450082	Application. The registered proprietor holds subject to Section 14(A) of the Land Commission Act, 1976 as regards Lots 3001 to 3040 inclusive in D.P.263997. Registered 10-3-1983.			<i>[Signature]</i>	REGISTERED
T438731	Application. Easement to drain water 2 wide created by D.P.263858 is hereby released insofar as it affects Lots 2085, 2086, 2089, 2090, 2091 and 2111. Registered 16-3-1983.			<i>[Signature]</i>	The residue of land in the Part in DP 263858 & DP 263997
T438731	Application. Easement to drain water 2 wide created by D.P.263858 affecting Lots 2083, 2086, 2089, 2090, 2091 and 2111 is partially released insofar as it is appurtenant to Lot 2113. Registered 16-3-1983.			<i>[Signature]</i>	
					REGISTRAR GENERAL

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

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



CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900



15024164

NEW SOUTH WALES

First Title : Old System

Prior Title : Vol.13910 Fol.185



Vol. 15024 Fol. 164

EDITION 29 3 1983
ISSUED

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

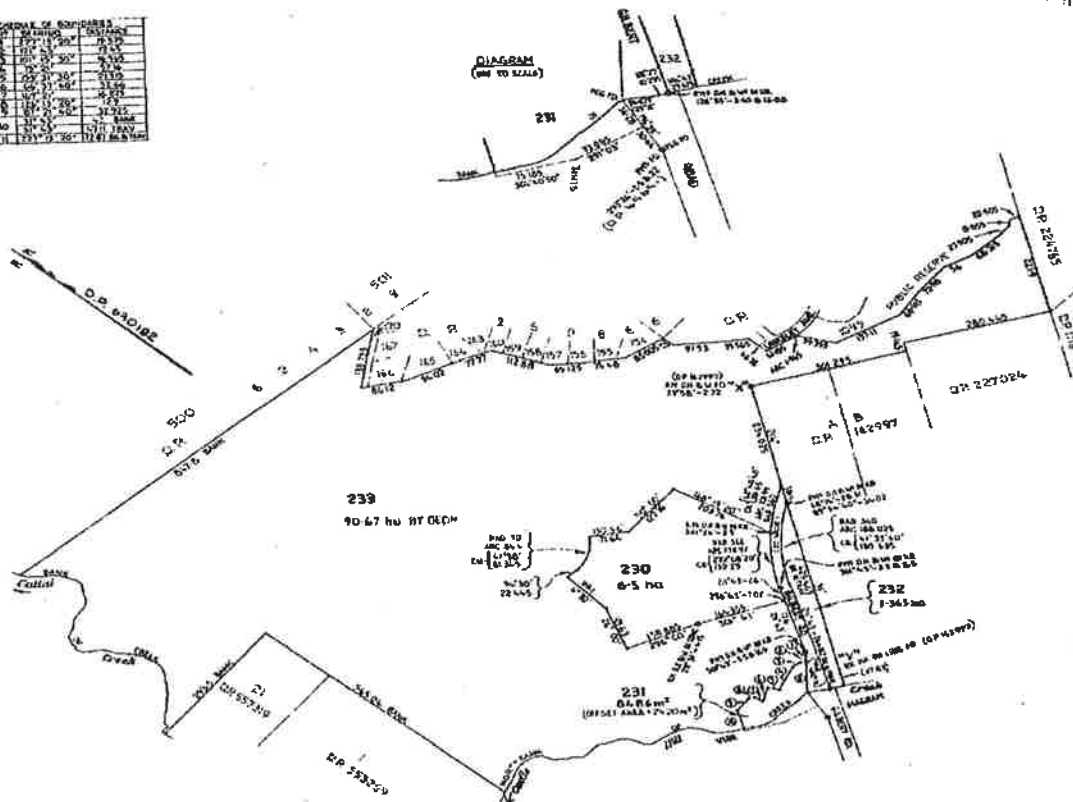
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES

NO.	DESCRIPTION	AREA
1	LOT 230	6.5 HA
2	LOT 231	0.16 HA
3	LOT 232	1.34 HA
4	LOT 233	90.67 HA



LAND REFERRED TO

Lot 230 in Deposited Plan 630182 at Glenhaven in the Shire of Baulkham Hills Parish of Castle Hill and County of Cumberland.

FIRST SCHEDULE

LAND COMMISSION OF NEW SOUTH WALES.

SECOND SCHEDULE

- GRY 1. Reservations and conditions, if any, contained in the Crown Grant.
2. ~~The registered proprietor holds subject to section 604 Local Government Act, 1919.~~
RWZ 3. C261921P Right of way appurtenant to the land above described affecting the land shown so burdened in Deposited Plan 603551.

0934610 8.81 D. West, Government Printer

REGISTERED PROPRIETOR

Registrar General

DTSP 700793 Registered 18-1-1984
 This folio is cancelled as to whole/part upon creation
 of computer folios for lots 7001 - 7066 in the
 abovementioned plan.

62



Registrar General.

PARTICULARS

Registrar General CANCELLATION

Interests created pursuant to Section 88B Conveyancing Act, 1919,
by the registration of Deposited Plan, 700793

Baroness

The residue of land in this folio comprises road shown in D.P. 700793

Benjamin



REGISTRAR GENERAL

NOTATIONS AND UNREGISTERED DEALINGS

20700793
 1889570 BC
 20700793



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

11/7/2018 3:53PM

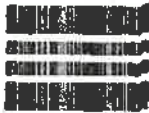
FOLIO: 7066/700793

First Title(s): OLD SYSTEM

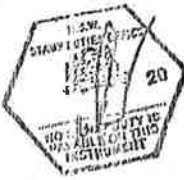
Prior Title(s): VOL 15024 FOL 164

Recorded	Number	Type of Instrument	C.T. Issue
20/1/1984	DP700793	DEPOSITED PLAN	FOLIO CREATED EDITION 1
16/3/1984	V39261	DEPARTMENTAL DEALING	EDITION 2
18/6/1984	V79336	REQUEST	EDITION 3
26/7/1985	V857103	TRANSFER	EDITION 4
17/12/1985	DP719671	DEPOSITED PLAN	
6/7/1988	X663510	APPLICATION	
19/5/1989	Y330174	APPLICATION FOR ISSUE OF CERTIFICATE OF TITLE	FOLIO CANCELLED
21/1/2000	6505025	DEPARTMENTAL DEALING	

*** END OF SEARCH ***



APR 1994



APPLICATION TO CANCEL RECORDING OF EASEMENT

SECTION 77 (1A) REAL PROPERTY ACT, 1900
(See Instructions for Completion on back of form)

C	1	1
s 46.		

DESCRIPTION
OF LAND
Note (a)

Dominant Tenement (and benefited) Torrens Title Reference	Servient Tenement (and burdened) Torrens Title Reference
Land in Folio Identifiers 7006, 7010, 7015, 7017, 7019, 7021, 7025, 7028, 7031 to 7033 incl., 7036/ 7043 to 7053 incl., and 7064 to 7066 incl. / 700193.	Vol. 15027 Fol. 83 (Lot 2083 DP 263858) Vol. 15027 Fol. 85 (Lot 2085 DP 263858) Vol. 15027 Fol. 86 (Lot 2086 DP 263858) Vol. 15027 Fols. 89-91 incl. (Lots 2088-2090 incl. DP 263858) Vol. 15027 Fol. 93 (Lot 2093 DP 263858) Vol. 15027 Fol. 117 (Lot 2111 DP 263858)

APPLICANT
Note (b)

LAND COMMISSION OF NEW SOUTH WALES

herein referred to as the Applicant, being the registered proprietor of the undermentioned easement, hereby applies to have the recording of the said easement cancelled on the folios of the Register shown above.

PARTICULARS
OF EASEMENT TO
BE CANCELLED
Note (c)

Easement created by Instrument No. **DP 263858**
Description of easement to be cancelled **Easement to Drain Water 2 Hides**



The full names of persons having registered interests in the land benefited by the easement and the nature of the interest and reference to the folios of the Register in which the interests were created are shown below. (The contents of these persons are set out overleaf.)

Full Name	Nature of Interest and reference to Instrument by which created
LAND COMMISSION OF NEW SOUTH WALES	REGISTERED PROPRIETOR

Note (d)

EXECUTION
Note (e)

I hereby certify this application to be correct for the purposes of the Real Property Act, 1900.

Signed in my presence by the applicant, who is personally known to me

Signature of Witness

SIGNED by me **JOHN MARTIN VAGLIANIS** as
DELEGATE of the LAND COMMISSION OF N.S.W.
and I certify that I have no notice of the
revocation of such delegation.

087

WITNESSES
Name of Witness (BLOCK LETTERS)

LEVEL 23, TOWN HALL HOUSE,
SYDNEY SQUARE, NSW 2000

PROXIMATE OFFICER

Signature of Applicant

TO BE COMPLETED
BY LODGING PARTY
Notes (f)
and (g)

LOGGED BY LAND COMMISSION OF N.S.W. LEVEL 23, TOWN HALL HOUSE, SYDNEY SQUARE, 2000.		LOCATION OF DOCUMENTS	
Delivery Box Number 984A		CT 361	OTHER
Checked 16/10		Herewith	
Passed 16/10		In R.G.C. with	
Signed		Produced by	
Extra Fee		Secondary Directions	
REGISTERED 15-6-1984 (Manual) 18-6-1984 (Computer)		Delivery Directions	
<i>Signature of Registrar General</i>			

OFFICE USE ONLY

6
JHE

RP53

I, We _____
 hereby consent to this application.

Signed in my presence by _____
 the mortgagee/lessee under mortgage/lease, who is personally known to me

 Signature of Witness

 Name of Witness (BLOCK LETTERS)

 Address and occupation of Witness

 Signature

Note (b)

INSTRUCTIONS FOR COMPLETION

This dealing should be lodged by hand at the Registrar General's Office.

Typewriting and handwriting should be clear, legible and in permanent black non-copying ink.

Alterations are not to be made by erasures: the words rejected are to be ruled through and initialled by the applicant.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the applicant and the attesting witness.

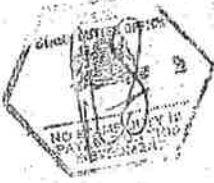
Rule up all blanks.

The following instructions relate to the side notes on the form.

- (a) Description of land.
 - (i) TORRENT: TITLE REFERENCE—For a manual reference inside the Volume and Folio (e.g., Vol. 8514 Fol. 124). For a computer folio (e.g., 12701 22 G).
 - (ii) Show the full name, address and occupation or description.
 - (iii) Show the registered number of the easement to be cancelled, and a brief description thereof (e.g., Q423456 Easement for drainage).
 - (iv) Show the full names of persons having registered interests in the land benefited by the easement, e.g., William James Smith/Mortgage Q881569.
- (b) Execution.
 - (i) Should there be insufficient space for the execution of this dealing, use an annexure sheet.
 - (ii) The certificate of execution under the Real Property Act, 1900, must be signed by the applicant, who should declare the dealing is the proper act of him or her, and is a copy of the application, to which he is personally known. Any person falsely or negligently certifying is liable to the penalties provided by section 112 of the Real Property Act, 1900.
 - (iii) If the application is executed by an attorney for the applicant pursuant to a registered power of attorney, the form of execution must set out the full name of the attorney, and the form of execution must indicate the source of his authority (e.g., "Atty by his attorney for receiver or delegate, in the case may be") BY power of attorney registered in the Real Property Act, 1900.
 - (iv) If the application is executed pursuant to an authority (other than specified in (iii)), the form of execution must indicate the source of the authority, and the form of execution must indicate the source of the authority.
 - (v) If the application is executed by a corporation under seal, the form of execution must include a statement that the seal has been properly affixed, e.g., "In accordance with the Articles of Association of the corporation." Each person attesting the affixing of the seal must state his position (e.g., Director, Secretary) in the corporation.
- (c) Intake the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.
- (d) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. Tick in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration.
- (e) The consent is to be completed by the persons having registered interests in the land benefited by the easement (as set out on the front of this form). The person signing the consent should declare "mortgage/lease" and "mortgage/lease" as appropriate. Should there be insufficient space for the recording of the consent, use an annexure sheet.

OFFICE USE ONLY

FIRST SCHEDULE DIRECTIONS				
(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME		
SECOND SCHEDULE AND OTHER DIRECTIONS				
(D) FOLIO IDENTIFIER	(E) DIRECTION	(F) NOTIN TYPE	(G) DEALING NUMBER	(H) DETAILS
15027-B3	ON			Easement to drain water 2 wide created by DP263858 affecting that and within described is related insofar as it is appurtenant to lots 7006, 7010, 7013, 7017, 7019, 7023, 7025, 7028, 7031, 7033, 7035, 7036, 7041, 7043, 7045, 7048, 7049, 7050, 7051, 7052, 7053, 7054, 7055, 7056, 7057, 7058, 7059, 7060, 7061, 7062, 7063, 7064, 7065, 7066, 7067, 7068, 7069, 7070, 7071, 7072, 7073, 7074, 7075, 7076, 7077, 7078, 7079, 7080, 7081, 7082, 7083, 7084, 7085, 7086, 7087, 7088, 7089, 7090, 7091, 7092, 7093, 7094, 7095, 7096, 7097, 7098, 7099, 7100, 7101, 7102, 7103, 7104, 7105, 7106, 7107, 7108, 7109, 7110, 7111, 7112, 7113, 7114, 7115, 7116, 7117, 7118, 7119, 7120, 7121, 7122, 7123, 7124, 7125, 7126, 7127, 7128, 7129, 7130, 7131, 7132, 7133, 7134, 7135, 7136, 7137, 7138, 7139, 7140, 7141, 7142, 7143, 7144, 7145, 7146, 7147, 7148, 7149, 7150, 7151, 7152, 7153, 7154, 7155, 7156, 7157, 7158, 7159, 7160, 7161, 7162, 7163, 7164, 7165, 7166, 7167, 7168, 7169, 7170, 7171, 7172, 7173, 7174, 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7507, 7508, 7509, 7510, 7511, 7512, 7513, 7514, 7515, 7516, 7517, 7518, 7519, 7520, 7521, 7522, 7523, 7524, 7525, 7526, 7527, 7528, 7529, 7530, 7531, 7532, 7533, 7534, 7535, 7536, 7537, 7538, 7539, 7540, 7541, 7542, 7543, 7544, 7545, 7546, 7547, 7548, 7549, 7550, 7551, 7552, 7553, 7554, 7555, 7556, 7557, 7558, 7559, 7560, 7561, 7562, 7563, 7564, 7565, 7566, 7567, 7568, 7569, 7570, 7571, 7572, 7573, 7574, 7575, 7576, 7577, 7578, 7579, 7580, 7581, 7582, 7583, 7584, 7585, 7586, 7587, 7588, 7589, 7590, 7591, 7592, 7593, 7594, 7595, 7596, 7597, 7598, 7599, 7600, 7601, 7602, 7603, 7604, 7605, 7606, 7607, 7608, 7609, 7610, 7611, 7612, 7613, 7614, 7615, 7616, 7617, 7618, 7619, 7620, 7621, 7622, 7623, 7624, 7625, 7626, 7627, 7628, 7629, 7630, 7631, 7632, 7633, 7634, 7635, 7636, 7637, 7638, 7639, 7640, 7641, 7642, 7643, 7644, 7645, 7646, 7647, 7648, 7649, 7650, 7651, 7652, 7653, 7654, 7655, 7656, 7657, 7658, 7659, 7660, 7661, 7662, 7663, 7664, 7665, 7666, 7667, 7668, 7669, 7670, 7671, 7672, 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8005, 8006, 8007, 8008, 8009, 8010, 8011, 8012, 8013, 8014, 8015, 8016, 8017, 8018, 8019, 8020, 8021, 8022, 8023, 8024, 8025, 8026, 8027, 8028, 8029, 8030, 8031, 8032, 8033, 8034, 8035, 8036, 8037, 8038, 8039, 8040, 8041, 8042, 8043, 8044, 8045, 8046, 8047, 8048, 8049, 8050, 8051, 8052, 8053, 8054, 8055, 8056, 8057, 8058, 8059, 8060, 8061, 8062, 8063, 8064, 8065, 8066, 8067, 8068, 8069, 8070, 8071, 8072, 8073, 8074, 8075, 8076, 8077, 8078, 8079, 8080, 8081, 8082, 8083, 8084, 8085, 8086, 8087, 8088, 8089, 8090, 8091, 8092, 8093, 8094, 8095, 8096, 8097, 8098, 8099, 8100, 8101, 8102, 8103, 8104, 8105, 8106, 8107, 8108, 8109, 8110, 8111, 8112, 8113, 8114, 8115, 8116, 8117, 8118, 8119, 8120, 8121, 8122, 8123, 8124, 8125, 8126, 8127, 8128, 8129, 8130, 8131, 8132, 8133, 8134, 8135, 8136, 8137, 8138, 8139, 8140, 8141, 8142, 8143, 8144, 8145, 8146, 8147, 8148, 8149, 8150, 8151, 8152, 8153, 8154, 8155, 8156, 8157, 8158, 8159, 8160, 8161, 8162, 8163, 8164, 8165, 8166, 8167, 8168, 8169, 8170, 8171, 8172, 8173, 8174, 8175, 8176, 8177, 8178, 8179, 8180, 8181, 8182, 8183, 8184, 8185, 8186, 8187, 8188, 8189, 8190, 8191, 8192, 8193, 8194, 8195, 8196, 8197, 8198, 8199, 8200, 8201, 8202, 8203, 8204, 8205, 8206, 8207, 8208, 8209, 8210, 8211, 8212, 8213, 8214, 8215, 8216, 8217, 8218, 8219, 8220, 8221, 8222, 8223, 8224, 8225, 8226, 8227, 8228, 8229, 8230, 8231, 8232, 8233, 8234, 8235, 8236, 8237, 8238, 8239, 8240, 8241, 8242, 8243, 8244, 8245, 8246, 8247, 8248, 8249, 8250, 8251, 8252, 8253, 8254, 8255, 8256, 8257, 8258, 8259, 8260, 8261, 8262, 8263, 8264, 8265, 8266, 8267, 8268, 8269, 8270, 8271, 8272, 8273, 8274, 8275, 8276, 8277, 8278, 8279, 8280, 8281, 8282, 8283, 8284, 8285, 8286, 8287, 8288, 8289, 8290, 8291, 8292, 8293, 8294, 8295, 8296, 8297, 8298, 8299, 8300, 8301, 8302, 8303, 8304, 8305, 8306, 8307, 8308, 8309, 8310, 8311, 8312, 8313, 8314, 8315, 8316, 8317, 8318, 8319, 8320, 8321, 8322, 8323, 8324, 8325, 8326, 8327, 8328, 8329, 8330, 8331, 8332, 8333, 8334, 8335, 8336, 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8835, 8836, 8837, 8838, 8839, 8840, 8841, 8842, 8843, 8844, 8845, 8846, 8847, 8848, 8849, 8850, 8851, 8852, 8853, 8854, 8855, 8856, 8857, 8858, 8859, 8860, 8861, 8862, 8863, 8864, 8865, 8866, 8867, 8868, 8869, 8870, 8871, 8872, 8873, 8874, 8875, 8876, 8877, 8878, 8879, 8880, 8881, 8882, 8883, 8884, 8885, 8886, 8887, 8888, 8889, 8890, 8891, 8892, 8893, 8894, 8895, 8896, 8897, 8898, 8899, 8900, 8901, 8902, 8903, 8904, 8905, 8906, 8907, 8908, 8909, 8910, 8911, 8912, 8913, 8914, 8915, 8916, 8917, 8918, 8919, 8920, 8921, 8922, 8923, 8924, 8925, 8926, 8927, 8928, 8929, 8930, 8931, 8932, 8933, 8934, 8935, 8936, 8937, 8938, 8939, 8940, 8941, 8942, 8943, 8944, 8945, 8946, 8947, 8948, 8949, 8950, 8951, 8952, 8953, 8954, 8955, 8956, 8957, 8958, 8959, 8960, 8961, 8962, 8963, 8964, 8965, 8966, 8967, 8968, 8969, 8970, 8971, 8972, 8973, 8974, 8975, 8976, 8977, 8978, 8979, 8980, 8981, 8982, 8983, 8984, 8985, 8986, 8987, 8988, 8989, 8990, 8991, 8992, 8993, 8994, 8995, 8996, 8997, 8998, 8999, 9000, 9001, 9002, 9003, 9004, 9005, 9006, 9007, 9008, 9009, 9010, 9011, 9012, 9013, 9014, 9015, 9016, 9017, 9018, 9019, 9020, 9021, 9022, 9023, 9024, 9025, 9026, 9027, 9028, 9029, 9030, 9031, 9032, 9033, 9034, 9035, 9036, 9037, 9038, 9039, 9040, 9041, 9042, 9043, 9044, 9045, 9046, 9047, 9048, 9049, 9050, 9051, 9052, 9053, 9054, 9055, 9056, 9057, 9058, 9059, 9060, 9



Crown Instrument
payment of Regi

H. K. ROBERTS

Crown Solicitor



V857103

per
TRANSFER

REAL PROPERTY ACT, 1900

C 101
\$ 0NMS

10/1

DESCRIPTION
OF LAND
Note (a)

Certificate of Title
Identifier: 7066/700793

WHOLE

PARISH of Castle Hill
COUNTY of Cumberland

TRANSFEROR
Note (b)

LAND COMMISSION OF NEW SOUTH WALES SYDNEY 2000

ESTATE
Note (c)

(the abovesigned TRANSFEROR) hereby acknowledges receipt of the consideration of \$ 1,600,000.00
and transfers an estate in fee simple
in the land above described to the TRANSFEREE

TRANSFEREE
Note (d)

HER MAJESTY QUEEN ELIZABETH II for the purposes of the
Public Instruction Act.

OFFICE USE ONLY

TENANCY
Note (e)

as joint tenants/tenants in common

PRIOR
ENCUMBRANCES
Note (f)

subject to the following PRIOR ENCUMBRANCES 1. NIL

DATE 13th July, 1986

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

SIGNATURE
Note (g)

Signed in my presence by the transferor who is personally known to me

[Signature]
Signature of Witness

L. J. LAURE
Name of Witness (BLOCK LETTERS)

TOWN HALL HOUSE SYDNEY, CLERK
Address and occupation of Witness

For HUGH KING ROBERTS State Crown Solicitor

Note (h)

Signed in my presence by ~~the transferor who is personally known to me~~
for the transferee by JOHN ANTHONY MAHONEY State Crown
Solicitor's Office who is personally known to me:

Signature of Witness

[Signature]
Name of Witness (BLOCK LETTERS)

A. S. MAHONEY
Address and occupation of Witness

S. STATE CROWN SOLICITOR

H. K. ROBERTS
State Crown Solicitor

OFF

[Signature]
Signature of Transferee

85/7442 C10/RX

TO BE COMPLETED
BY LODGING PARTY
Notes (h)
and (i)

LODGED BY
State Crown Solicitor
STATE CROWN SOLICITORS OFFICE
GOODSELL BUILDING
8-12 CHIFLEY SQUARE, SYDNEY, 2000
DX 19 PHONE: 250-7406

Delivery Box Number

313E

OFFICE USE ONLY

Checked
637
Signed

Passed

Extra Fee

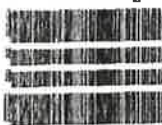
REGISTERED

-19

28 JUL 1986

Registrar-General

LOCATION OF DOCUMENTS	
CT	OTHER
	Herewith
	In H.G.O. with
	Produced by
Secondary Directions	
Delivery Directions	CT <u>40</u>



APPLICATION

REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

AP

CEX	101	1
\$ 10.00		

DESCRIPTION
OF LAND
Note (a)

Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
7066/700793	WHOLE PART BEING LOT 2 IN LP 719671	PARISH CASTLE HILL COUNTY CUMBERLAND

REGISTERED
DEALING
Note (b)

Type of Dealing	Registered Number	Torrens Title Reference

PRESENT
REGISTERED
PROPRIETOR
Note (c)

HER MAJESTY QUEEN ELIZABETH II.

Note (d)

Is presently recorded as REGISTERED PROPRIETOR of the land above described. Application is hereby made to record above mentioned registered dealing.

NEW
REGISTERED
PROPRIETOR(S)
Note (e)

THE STATE OF NEW SOUTH WALES.	OFFICE USE ONLY CLERK
-------------------------------	--------------------------

Note (d)

as REGISTERED PROPRIETOR of the land above described. above mentioned registered dealing.

Note (f)

PURSUANT TO SECTION 25A
CROWN LANDS CONSOLIDATION ACT,
1913,
SEE G.G. DATED 15-4-1988.

DECLARATION UNDER SECTION 25A, CROWN LANDS
CONSOLIDATION ACT 1913, IN RESPECT OF LANDS
IN pursuance of the provisions of section 25A, Crown Lands
Consolidation Act 1913, I declare that the lands particularised
hereunder may be dealt with as if they had been acquired under the
Closer Settlement Acts or as Crown Land within the meaning of
the Crown Lands Consolidation Act 1913.

I. R. CAUSLEY, Minister for Natural Resources

Sydney, 15th April, 1988.

DATE	27 JUN 1988
------	-------------

EXPLANATION
Note (g)

I hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.
Signed in my presence by the applicant who is personally known to me.

LAND VESTED IN HER MAJESTY QUEEN ELIZABETH II
Land District—metropolitan; Shire—Bathurst Hills

Parish Castle Hill (Sheet 19, County Cumberland), 1 366 square
metres at Castle Hill, being lot 2, D.P. 719671, and comprising
part of the land in Certificate of Title, Folio 106/700793. MNB7 1504.

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

TO BE COMPLETED
BY LODGING PARTY
Notes (h)
and (i)

LODGED BY		LOCATION OF DOCUMENTS	
LTO		CT	OTHER
10V			Here with
			In L.T.O. with
			Produced by
Delivery Box Number	REGISTERED - 19	Secondary Directions	
Checked 10/1/88	Passed	Delivery Directions	OVER
Signed	Extn. Fee		

OFFICE USE ONLY



5 JUL 1988

INSTRUCTIONS FOR COMPLETION

This form is to be used only if no other approved form is appropriate for the purpose, e.g., Applications under section 46 (c) Real Property Act, 1900; Application under section 12 (4) Trustee Act, 1925-1942.

When so required under the Stamp Duties Act, 1920, this dealing should be marked by the Stamp Duties Division, Department of Finance before lodgment at the Land Titles Office.

Typewriting and handwriting should be clear, legible and in permanent dense black or dark blue non-copying ink.

Revisions are not to be made by erasure; the words rejected are to be ruled through and initialed by the applicant.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an enclosure and signed by the applicant and the attesting witness.

None of all blanks

The following instructions relate to the side notes on the form.

- (4) Description of land, (if the discharge of mortgage is only in respect of a registered dealing, rule through this panel.)

1. DECLASSIFICATION REFERENCE - Give a Manual Page Number, the Volume and Page (e.g., Vol. II, p. 1, 40), File or Classification Information, the Policy Information (e.g., 1970101), and any other information that may be necessary to identify the document.

- (b) Registered dealing. (If the discharge of mortgage is only in respect of a folio of the Register, rule through this panel.)

5. Show the registered number of the lease, mortgage, or charge and the title reference affected thereby, Lease--Y123456--Vol. 123456 Fol. 124.--Folio 123456.

- (c) Show the full name of the registered proprietor as recorded on the Register.

- (d) Strike out "and above described" or "above mentioned registered dealing", whichever does not apply.

14. Name the full name, address and occupation or description of the person(s) to be registered as proprietor(s).

- (f) Set out the basis of the request, e.g., consequent upon the appointment of, etc.

- 543 E. 86th Ave.

- GENERAL: (i) Should there be insufficient space for the execution of this dealing, use an annexure sheet.

16. The certificate of correctness under the Real Property Act, 1950, must be signed by the applicant who should execute the deed in the presence of an adult witness, not being a party to the application, to whom he/she is personally known. Any person falsely or negligently certifying in this to the penalties provided by section 117 of the Real Property Act, 1950.

- 10-2025
- ATTORNEY (a) If the application is executed by an attorney for the applicant pursuant to a registered power of attorney, the form of attestation must set out the full name of the attorney, and the form of execution must indicate the source of his/her authority, e.g. "All by his/her attorney (to receive or delegate, as the case may be), XY pursuant to power of attorney registered Book No. _____."

- ADJUDICATE If this application is executed pursuant to an authority (other than specified in (iii)), the form of exorcism must indicate the statutory, judicial or other authority pursuant to which the application has been executed.

- CORPORATION:** (v) If the application is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the affixing of the seal must state his/her position (e.g., director, secretary) in the corporation.

- 4) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.

- 2) The indexing party is to complete this LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration.

OFFICE USE ONLY

FIRST SCHEDULE AND OTHER DIRECTIONS

(A) FOLIO IDENTIFIER	(B) DIRECTION	(C) NAME		
	PROP	THE STATE OF NEW SOUTH WALES of Lot 2 in DPT 19671 and HER MOST GRACIOUS MAJESTY Q. ELIZABETH THE SECOND of the residue being Lot 1 in DPT 19671.		
(A) FOLIO IDENTIFIER	(B) DIRECTION	(F) NOTEN TYPE	(G) DEALING NUMBER	(H) DETAILS
	CT		NOT	



NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

SEARCH DATE

11/7/2018 3:53PM

FOLIO: 1/719671

First Title(s): OLD SYSTEM

Prior Title(s): 7066/700793

Recorded	Number	Type of Instrument	C.T. Issue
17/12/1985	DP719671	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
22/5/1989	Y330174	APPLICATION FOR ISSUE OF CERTIFICATE OF TITLE	FOLIO CREATED EDITION 1
1/5/1992	DP646017	DEPOSITED PLAN	
19/12/2006	AC809654	APPLICATION	EDITION 2
20/7/2016	AK607998	DEPARTMENTAL DEALING	

*** END OF SEARCH ***



LAND
REGISTRY
SERVICES

Title Search



NEW SOUTH WALES LAND REGISTRY SERVICES - TITLE SEARCH

FOLIO: 1/719671

SEARCH DATE	TIME	EDITION NO	DATE
11/7/2018	4:04 PM	2	19/12/2006

LAND

LOT 1 IN DEPOSITED PLAN 719671
AT GLENHAVEN
LOCAL GOVERNMENT AREA THE HILLS SHIRE
PARISH OF CASTLE HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP719671

FIRST SCHEDULE

MINISTER FOR EDUCATION AND TRAINING

(AP AC809654)

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 C261921 RIGHT OF WAY APPURTENANT TO THE LAND ABOVE
DESCRIBED AFFECTING THE LAND SHOWN AS "PROPOSED RIGHT
OF WAY 66' WIDE" IN DP185185

NOTATIONS

DP646017 PLAN FOR LEASE PURPOSES

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

castle hill

PRINTED ON 11/7/2018

* Any entries preceded by an asterisk do not appear on the current edition of the Certificate of Title. Warning: the information appearing under notations has not been formally recorded in the Register. InfoTrack an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.

APPENDIX E

SITE PHOTOGRAPHS





Photo 1. Test pitting at the southern vegetated portion of the site



Photo 2. Natural silty clay material viewed



Photo 3. Subsurface material at HA03



Photo 4. Subsurface material at HA06

APPENDIX F

ANALYTICAL RESULTS TABLES



Table F1 soil analytical results - TRH/BTEXN/Lead
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

TRH											BTEX compounds						
Sample ID	Date sampled	Laboratory report no.	Sample depth (mBGL)	PID (ppm)	F1: C ₆ -C ₁₀ less BTEX	F2: >C ₁₀ -C ₁₆ less naphthalene	>C ₁₀ -C ₁₆	F3: >C ₁₆ -C ₃₄	F4: >C ₃₄ -C ₄₀	Total >C ₁₀ - C ₄₀	Benzene	Toluene	Ethylbenzene	m- & p-Xylene	o-Xylene	Total xylene	Naphthalene
Soil investigation levels for commercial workers ⁽¹⁾																	
HSL-A for vapour intrusion			0 to <1 m		45	110	-	-	-	-	0.5	160	55	-	-	40	3
			1 m to <2 m		70	240	-	-	-	-	0.5	220	NL	-	-	60	NL
Health investigation levels			-		-	-	-	-	-	-	-	-	-	-	-	-	-
Ecological Screening Levels																	
ESL - Residential A			-		180	120	-	300	2,800	-	50	85	70	-	-	105	-
Drilling soil samples																	
TP01-0.4	11/7/18	607407	0.4	0.4	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP03-0.1	11/7/18	607407	0.1	0.1	< 20	63	63	320	120	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP04-0.1	11/7/18	607407	0.1	0.2	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP05-0.2	11/7/18	607407	0.2	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP06-0.3	11/7/18	607407	0.3	0.2	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP07-0.3	11/7/18	607407	0.3	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP08-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP09-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP10-0.1	11/7/18	607407	0.1	0.2	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP11-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP12-0.1	11/7/18	607407	0.1	0.4	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
TP12-0.9	11/7/18	607407	0.9	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA01-0.4	11/7/18	607407	0.4	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA02-0.4	11/7/18	607407	0.4	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA03-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	130	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA03-0.9	11/7/18	607407	0.9	0.1	< 20	<50	<50	140	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA04-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	120	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA05-0.1	11/7/18	607407	0.1	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA06-0.5	11/7/18	607407	0.5	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA07-0.2	11/7/18	607407	0.2	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
QA01 (Duplicate of HA07-0.2)	11/7/18	607407	0.2	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
QA02 (Triplicate of HA07-0.2)	11/7/18	SE181538	0.2	0.1	< 25	<25	<25	<90	<120	<210	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	< 0.1
HA08-0.2	11/7/18	607407	0.2	0.1	< 20	<50	<50	180	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
HA09-0.8	11/7/18	607407	0.8	0.1	< 20	<50	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
Practical quantitation limit					20	50	50	100	100	100	0.1	0.1	0.1	0.2	0.1	0.3	0.5

Notes:
Concentration expressed in mg/kg
⁽¹⁾ NEPM (2013) *Schedule B1 - Investigation levels for soil and groundwater*
⁽²⁾ Friebel & Nadebaum (2011) *Health screening levels for petroleum hydrocarbons in soil and groundwater. Part 1: Technical development document. CRC CARE Technical Report no. 10*
NL - non limiting

Table F2 soil analytical results - PAH

Samuel Gilbert Public School DSI

Ridgecrop Drive, Caste Hill, NSW

PAHs																							
Sample ID	Date sampled	Laboratory report no.	Sample depth (mBGL)	PID (ppm)	Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+g)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Total PAH	Benzo(a)pyrene TEQ	
Soil investigation levels for commercial workers ⁽¹⁾																							
Health investigation levels - Residential A					-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	300	3
HSL-A for vapour intrusion			0 to <1 m		3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
			1 m to <2 m		NL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Soil Ecological investigation levels																							
EIL - Residential A					370	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Soil Ecological screening levels																							
ESL - Residential A					-	-	-	-	-	-	-	-	-	-	-	-	0.7	-	-	-	-	-	
Drilling soil samples																							
TP01-0.4	11/7/18	607407	0.4	0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP03-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP04-0.1	11/7/18	607407	0.1	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP05-0.2	11/7/18	607407	0.2	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP06-0.3	11/7/18	607407	0.3	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP07-0.3	11/7/18	607407	0.3	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP08-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP09-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP10-0.1	11/7/18	607407	0.1	0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP11-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP12-0.1	11/7/18	607407	0.1	0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
TP12-0.9	11/7/18	607407	0.9	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA01-0.4	11/7/18	607407	0.4	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA02-0.4	11/7/18	607407	0.4	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA03-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA03-0.9	11/7/18	607407	0.9	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA04-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA05-0.1	11/7/18	607407	0.1	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA06-0.5	11/7/18	607407	0.5	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA07-0.2	11/7/18	607407	0.2	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
QA01 (Duplicate of HA07-0.2)	11/7/18	607407	0.2	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
QA02 (Triplicate of HA07-0.2)	11/7/18	SE181538	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	
HA08-0.2	11/7/18	607407	0.2	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
HA09-0.8	11/7/18	607407	0.8	0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	
Practical quantitation limit					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	

Notes:

Concentration expressed in mg/kg

⁽¹⁾ NEPM (2013) *Schedule B1 - Investigation levels for soil and groundwater*

⁽²⁾ Friebel & Nadebaum (2011) *Health screening levels for petroleum hydrocarbons in soil and groundwater. Part 1: Technical development document. CRC CARE Technical Report no. 10*

Table F4 - soil analytical results - metals
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

Heavy Metals															
Sample ID	Date sampled	Laboratory report no.	Sample depth (mBGL)	PID (ppm)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	pH	Clay percentage (%)	Cation Exchange Capacity (meq/100g)
Health-based investigation levels - Residential A ¹					100	20	100	6,000	300	40	400	7,400	-	-	-
Generic and calculated EIL for Urban residential/public open space ²					100	-	190		1,100	-	170	400	-	-	-
TP01-0.4	11/7/18	607407	0.4	0.4	7.7	< 0.4	14	11	23	< 0.1	< 5	20	-	-	-
TP03-0.1	11/7/18	607407	0.1	0.1	< 2	< 0.4	7.7	11	12	< 0.1	< 5	35	-	-	-
TP04-0.1	11/7/18	607407	0.1	0.2	5.4	< 0.4	11	< 5	14	< 0.1	< 5	12	-	-	-
TP05-0.2	11/7/18	607407	0.2	0.1	11	< 0.4	23	< 5	21	< 0.1	< 5	6.3	-	-	-
TP06-0.3	11/7/18	607407	0.3	0.2	5.1	< 0.4	18	< 5	12	< 0.1	< 5	< 5	-	-	-
TP07-0.3	11/7/18	607407	0.3	0.1	9.5	< 0.4	19	< 5	13	< 0.1	< 5	5.1	-	-	-
TP08-0.1	11/7/18	607407	0.1	0.1	7.1	< 0.4	17	< 5	14	< 0.1	< 5	10	-	-	-
TP09-0.1	11/7/18	607407	0.1	0.1	7.1	< 0.4	19	< 5	10	< 0.1	< 5	< 5	-	-	-
TP10-0.1	11/7/18	607407	0.1	0.2	6.1	< 0.4	19	25	12	< 0.1	36	35	8	<1	16
TP11-0.1	11/7/18	607407	0.1	0.1	5.8	< 0.4	14	< 5	15	< 0.1	< 5	13	-	-	-
TP12-0.1	11/7/18	607407	0.1	0.4	5.9	< 0.4	20	< 5	11	< 0.1	< 5	< 5	-	-	-
TP12-0.9	11/7/18	607407	0.9	0.1	< 2	< 0.4	8.3	< 5	6.4	< 0.1	< 5	< 5	-	-	-
HA01-0.4	11/7/18	607407	0.4	0.1	5.9	< 0.4	24	< 5	13	< 0.1	< 5	< 5	-	-	-
HA02-0.4	11/7/18	607407	0.4	0.1	< 2	< 0.4	12	< 5	12	< 0.1	< 5	6.5	-	-	-
HA03-0.1	11/7/18	607407	0.1	0.1	5.1	< 0.4	11	10	13	< 0.1	9.3	39	-	-	-
HA03-0.9	11/7/18	607407	0.9	0.1	9.5	< 0.4	19	25	14	< 0.1	14	30	-	-	-
HA04-0.1	11/7/18	607407	0.1	0.1	4.7	< 0.4	12	16	16	< 0.1	6.1	47	-	-	-
HA05-0.1	11/7/18	607407	0.1	0.1	4.7	< 0.4	8.3	7.4	14	< 0.1	< 5	37	-	-	-
HA06-0.5	11/7/18	607407	0.5	0.1	8.8	< 0.4	16	< 5	16	< 0.1	< 5	6.3	-	-	-
HA07-0.2	11/7/18	607407	0.2	0.1	5	< 0.4	17	19	13	< 0.1	27	50	-	-	-
QA01 (Duplicate of HA07-0.2)	11/7/18	607407	0.8	0.1	< 2	< 0.4	13	21	13	< 0.1	23	73	-	-	-
QA02 (Triplicate of HA07-0.2)	11/7/18	SE181538	0.2	0.1	4	<0.3	9.7	17	10	<0.05	15	42	-	-	-
HA08-0.2	11/7/18	607407	0.2	0.1	< 2	< 0.4	8.9	7.1	9	< 0.1	6.4	31	-	-	-
HA09-0.8	11/7/18	607407	0.8	0.1	10	< 0.4	31	< 5	15	< 0.1	< 5	5.5	-	-	-
Practical quantitation limit					2	0.4	5	5	5	0.1	5	5	0.1	1	0.05

Notes:
Concentration expressed in mg/kg
⁽¹⁾ NEPM (2013) *Schedule B1 - Investigation levels for soil and groundwater*
² NEPC (2013) NEPM - Schedule B1- Investigation Levels for Soil and Groundwater - Table 1B(1)-(5) Soil-specific and calculated EILs for Residential A
NL - non limiting
BOLD Exceeds adopted criteria

Table F5 - soil analytical results - asbestos and exchangeable cations
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

Asbestos								
Sample ID	Date sampled	Laboratory report no.	Sample depth (mBGL)	Asbestos detected (g/kg)	Asbestos type	Sample weight (dry)	Free Fibres	Friable Asbestos (%w/w)
Drilling soil samples								
TP01-0.4	11/7/18	607407	0.4	No	-	501	No	<0.001
TP03-0.1	11/7/18	607407	0.1	No	-	370	No	<0.001
TP04-0.1	11/7/18	607407	0.1	No	-	567	No	<0.001
TP05-0.2	11/7/18	607407	0.2	No	-	510	No	<0.001
TP06-0.3	11/7/18	607407	0.3	No	-	455	No	<0.001
TP07-0.3	11/7/18	607407	0.3	No	-	485	No	<0.001
TP08-0.1	11/7/18	607407	0.1	No	-	648	No	<0.001
TP09-0.1	11/7/18	607407	0.1	No	-	673	No	<0.001
TP10-0.1	11/7/18	607407	0.1	No	-	727	No	<0.001
TP11-0.1	11/7/18	607407	0.1	No	-	853	No	<0.001
TP12-0.1	11/7/18	607407	0.1	No	-	921	No	<0.001
HA01-0.4	11/7/18	607407	0.4	No		869	No	<0.001
HA02-0.4	11/7/18	607407	0.4	No		760	No	<0.001
HA03-0.1	11/7/18	607407	0.1	No		620	No	<0.001
HA04-0.1	11/7/18	607407	0.1	No		841	No	<0.001
HA05-0.1	11/7/18	607407	0.1	No	-	813	No	<0.001
HA06-0.1	11/7/18	607407	0.5	No	-	817	No	<0.001
HA07-0.2	11/7/18	607407	0.2	No	-	763	No	<0.001
HA08-0.2	11/7/18	607407	0.2	No	-	711	No	<0.001
HA09-0.8	11/7/18	607407	0.8	No	-	827	No	<0.001
Practical quantitation limit				-	-	-	-	0.001

Notes:
Concentration expressed in mg/kg
NL - non limiting

APPENDIX G

LABORATORY REPORTS



Certificate of Analysis

WSP Australia P/L NSW
Level 27, Ernst & Young Centre
Sydney
NSW 2001



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alexander Carpenter

Report 607407-S
Project name SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID PS110639
Received Date Jul 12, 2018

Client Sample ID			TP01-0.4	TP03-0.1	TP04-0.1	TP05-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14650	S18-JI14651	S18-JI14652	S18-JI14653
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	63	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	63	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	320	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	120	< 100	< 100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	32	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	190	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	230	65	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	452	65	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	89	87	74
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP01-0.4	TP03-0.1	TP04-0.1	TP05-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14650	S18-JI14651	S18-JI14652	S18-JI14653
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	87	92	88	91
p-Terphenyl-d14 (surr.)	1	%	83	80	77	99
% Moisture	1	%	8.9	14	8.4	16
Heavy Metals						
Arsenic	2	mg/kg	7.7	< 2	5.4	11
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	14	7.7	11	23
Copper	5	mg/kg	11	11	< 5	< 5
Lead	5	mg/kg	23	12	14	21
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	20	35	12	6.3

Client Sample ID			TP06-0.3	TP07-0.3	TP08-0.1	TP09-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14654	S18-JI14655	S18-JI14656	S18-JI14657
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	65	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	65	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	76	72	70	76

Client Sample ID			TP06-0.3	TP07-0.3	TP08-0.1	TP09-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14654	S18-JI14655	S18-JI14656	S18-JI14657
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	98	103	90
p-Terphenyl-d14 (surr.)	1	%	98	125	96	89
% Moisture	1	%	10.0	13	8.8	9.7
Heavy Metals						
Arsenic	2	mg/kg	5.1	9.5	7.1	7.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	18	19	17	19
Copper	5	mg/kg	< 5	< 5	< 5	< 5
Lead	5	mg/kg	12	13	14	10
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	< 5	< 5
Zinc	5	mg/kg	< 5	5.1	10	< 5

Client Sample ID			TP10-0.1	TP11-0.1	TP12-0.1	TP12-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14658	S18-JI14659	S18-JI14660	S18-JI14661
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100

Client Sample ID			TP10-0.1	TP11-0.1	TP12-0.1	TP12-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14658	S18-JI14659	S18-JI14660	S18-JI14661
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	68	77	78	78
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	84	84	99	77
p-Terphenyl-d14 (surr.)	1	%	83	84	95	74
% Clay	1	%	< 1	-	-	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	17	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	8.0	-	-	-
% Moisture	1	%	12	14	8.9	5.3
Heavy Metals						
Arsenic	2	mg/kg	6.1	5.8	5.9	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	19	14	20	8.3
Copper	5	mg/kg	25	< 5	< 5	< 5
Lead	5	mg/kg	12	15	11	6.4
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	36	< 5	< 5	< 5
Zinc	5	mg/kg	35	13	< 5	< 5

Client Sample ID			TP10-0.1	TP11-0.1	TP12-0.1	TP12-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14658	S18-JI14659	S18-JI14660	S18-JI14661
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	16	-	-	-

Client Sample ID			HA01-0.4	HA02-0.4	HA03-0.1	HA03-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14662	S18-JI14663	S18-JI14664	S18-JI14665
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	130	140
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	31
TRH C15-C28	50	mg/kg	< 50	< 50	51	69
TRH C29-C36	50	mg/kg	< 50	68	110	130
TRH C10-36 (Total)	50	mg/kg	< 50	68	161	230
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	59	59	65	66
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	HA01-0.4 Soil S18-JI14662 Jul 11, 2018	HA02-0.4 Soil S18-JI14663 Jul 11, 2018	HA03-0.1 Soil S18-JI14664 Jul 11, 2018	HA03-0.9 Soil S18-JI14665 Jul 11, 2018
Polycyclic Aromatic Hydrocarbons						
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	96	89	95	96
p-Terphenyl-d14 (surr.)	1	%	96	91	92	91
% Moisture	1	%	13	8.5	8.8	8.8
Heavy Metals						
Arsenic	2	mg/kg	5.9	< 2	5.1	9.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	12	11	19
Copper	5	mg/kg	< 5	< 5	10	25
Lead	5	mg/kg	13	12	13	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	9.3	14
Zinc	5	mg/kg	< 5	6.5	39	30

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	HA04-0.1 Soil S18-JI14666 Jul 11, 2018	HA05-0.1 Soil S18-JI14667 Jul 11, 2018	HA06-0.5 Soil S18-JI14669 Jul 11, 2018	HA07-0.2 Soil S18-JI14670 Jul 11, 2018
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	120	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	25	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	69	58	< 50	< 50
TRH C29-C36	50	mg/kg	100	76	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	194	134	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	65	64	58	65

Client Sample ID			HA04-0.1	HA05-0.1	HA06-0.5	HA07-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14666	S18-JI14667	S18-JI14669	S18-JI14670
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	104	101	110	107
p-Terphenyl-d14 (surr.)	1	%	93	86	98	103
% Moisture	1	%	7.0	11	11	14
Heavy Metals						
Arsenic	2	mg/kg	4.7	4.7	8.8	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	8.3	16	17
Copper	5	mg/kg	16	7.4	< 5	19
Lead	5	mg/kg	16	14	16	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	6.1	< 5	< 5	27
Zinc	5	mg/kg	47	37	6.3	50

Client Sample ID			HA08-0.2	HA09-0.8	QA01	TB01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14671	S18-JI14672	S18-JI14673	S18-JI14674
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	180	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-

Client Sample ID			HA08-0.2	HA09-0.8	QA01	TB01
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-JI14671	S18-JI14672	S18-JI14673	S18-JI14674
Date Sampled			Jul 11, 2018	Jul 11, 2018	Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	23	< 20	< 20	-
TRH C15-C28	50	mg/kg	120	< 50	< 50	-
TRH C29-C36	50	mg/kg	130	< 50	< 50	-
TRH C10-36 (Total)	50	mg/kg	273	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	67	59	57	86
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	96	104	99	-
p-Terphenyl-d14 (surr.)	1	%	85	93	85	-
% Moisture	1	%	11	12	20	-
Heavy Metals						
Arsenic	2	mg/kg	< 2	10	< 2	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	8.9	31	13	-
Copper	5	mg/kg	7.1	< 5	21	-
Lead	5	mg/kg	9.0	15	13	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Nickel	5	mg/kg	6.4	< 5	23	-
Zinc	5	mg/kg	31	5.5	73	-

Client Sample ID			^{R20} TS01
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-JI14675
Date Sampled			Jul 11, 2018
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene ^{NO2}	0.5	mg/kg	98
TRH C6-C10	20	mg/kg	97
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	20	mg/kg	99
BTEX			
Benzene	0.1	mg/kg	91
Toluene	0.1	mg/kg	110
Ethylbenzene	0.1	mg/kg	100
m&p-Xylenes	0.2	mg/kg	100
o-Xylene	0.1	mg/kg	110
Xylenes - Total	0.3	mg/kg	100
4-Bromofluorobenzene (surr.)	1	%	110

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 18, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons	Sydney	Jul 18, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jul 18, 2018	14 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Sydney	Jul 18, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Eurofins mgt Suite B7			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Jul 18, 2018	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Polycyclic Aromatic Hydrocarbons	Melbourne	Jul 18, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Jul 18, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Clay	Brisbane	Jul 16, 2018	6 Day
- Method: LTM-GEN-7040			
pH (1:5 Aqueous extract at 25°C as rec.)	Melbourne	Jul 16, 2018	7 Day
- Method: LTM-GEN-7090 pH in soil by ISE			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Jul 16, 2018	7 Day
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Jul 18, 2018	180 Days
- Method: LTM-MET-3060 - Cation Exchange Capacity (CEC) & Exchangeable Sodium Percentage (ESP)			
% Moisture	Melbourne	Jul 16, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001
Project Name: SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID: PS110639

Order No.:
Report #: 607407
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Jul 12, 2018 6:27 PM
Due: Jul 20, 2018
Priority: 5 Day
Contact Name: Alexander Carpenter

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	TP01-0.4	Jul 11, 2018		Soil	S18-JI14650		X			X		X	
2	TP03-0.1	Jul 11, 2018		Soil	S18-JI14651		X			X		X	
3	TP04-0.1	Jul 11, 2018		Soil	S18-JI14652		X			X		X	
4	TP05-0.2	Jul 11, 2018		Soil	S18-JI14653		X			X		X	
5	TP06-0.3	Jul 11, 2018		Soil	S18-JI14654		X			X		X	
6	TP07-0.3	Jul 11, 2018		Soil	S18-JI14655		X			X		X	
7	TP08-0.1	Jul 11, 2018		Soil	S18-JI14656		X			X		X	
8	TP09-0.1	Jul 11, 2018		Soil	S18-JI14657		X			X		X	
9	TP10-0.1	Jul 11, 2018		Soil	S18-JI14658	X	X		X	X	X	X	

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Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
10	TP11-0.1	Jul 11, 2018		Soil	S18-J114659		X			X		X	
11	TP12-0.1	Jul 11, 2018		Soil	S18-J114660		X			X		X	
12	TP12-0.9	Jul 11, 2018		Soil	S18-J114661					X		X	
13	HA01-0.4	Jul 11, 2018		Soil	S18-J114662		X			X		X	
14	HA02-0.4	Jul 11, 2018		Soil	S18-J114663		X			X		X	
15	HA03-0.1	Jul 11, 2018		Soil	S18-J114664		X			X		X	
16	HA03-0.9	Jul 11, 2018		Soil	S18-J114665					X		X	
17	HA04-0.1	Jul 11, 2018		Soil	S18-J114666		X			X		X	
18	HA05-0.1	Jul 11, 2018		Soil	S18-J114667		X			X		X	
19	HA06-0.1	Jul 11, 2018		Soil	S18-J114668		X						
20	HA06-0.5	Jul 11, 2018		Soil	S18-J114669					X		X	
21	HA07-0.2	Jul 11, 2018		Soil	S18-J114670		X			X		X	

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Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
22	HA08-0.2	Jul 11, 2018		Soil	S18-JI14671		X			X		X	
23	HA09-0.8	Jul 11, 2018		Soil	S18-JI14672		X			X		X	
24	QA01	Jul 11, 2018		Soil	S18-JI14673					X		X	
25	TB01	Jul 11, 2018		Soil	S18-JI14674								X
26	TS01	Jul 11, 2018		Soil	S18-JI14675								X
27	R_11072018	Jul 11, 2018		Water	S18-JI14677							X	
28	R_12072018	Jul 11, 2018		Water	S18-JI14678							X	
29	TP02-0.1	Jul 11, 2018		Soil	S18-JI15309			X					
30	TP02-0.6	Jul 11, 2018		Soil	S18-JI15310			X					
31	TP03-0.6	Jul 11, 2018		Soil	S18-JI15311			X					
32	TP04-0.8	Jul 11, 2018		Soil	S18-JI15312			X					
33	TP05-1.1	Jul 11, 2018		Soil	S18-JI15313			X					

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Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
34	TP06-0.7	Jul 11, 2018		Soil	S18-Jl15314			X					
35	TP07-0.9	Jul 11, 2018		Soil	S18-Jl15315			X					
36	TP08-0.6	Jul 11, 2018		Soil	S18-Jl15316			X					
37	TP09-0.8	Jul 11, 2018		Soil	S18-Jl15317			X					
38	TP10-0.8	Jul 11, 2018		Soil	S18-Jl15318			X					
39	TP11-1.0	Jul 11, 2018		Soil	S18-Jl15319			X					
40	HA04-0.7	Jul 11, 2018		Soil	S18-Jl15321			X					
41	HA05-0.4	Jul 11, 2018		Soil	S18-Jl15322			X					
42	HA07-1.2	Jul 11, 2018		Soil	S18-Jl15323			X					
43	HA09-0.1	Jul 11, 2018		Soil	S18-Jl15324			X					
44	QA02	Jul 11, 2018		Soil	S18-Jl15325			X					
45	QA02A	Jul 11, 2018		Soil	S18-Jl17154			X					

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
			X	X	X	X	X	X
		X					X	X
	X							
	1	20	17	1	23	1	25	2
Test Counts								

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
% Clay	%	< 1			1	Pass	
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
Naphthalene			%	93			70-130	Pass	
Naphthalene			%	85			70-130	Pass	
TRH C6-C10			%	96			70-130	Pass	
TRH C6-C10			%	100			70-130	Pass	
TRH >C10-C16			%	83			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C6-C9			%	100			70-130	Pass	
TRH C10-C14			%	82			70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	84			70-130	Pass	
Toluene			%	88			70-130	Pass	
Ethylbenzene			%	90			70-130	Pass	
m&p-Xylenes			%	91			70-130	Pass	
Xylenes - Total			%	91			70-130	Pass	
LCS - % Recovery									
Polycyclic Aromatic Hydrocarbons									
Acenaphthene			%	70			70-130	Pass	
Acenaphthylene			%	71			70-130	Pass	
Anthracene			%	77			70-130	Pass	
Benz(a)anthracene			%	72			70-130	Pass	
Benzo(a)pyrene			%	71			70-130	Pass	
Benzo(b&j)fluoranthene			%	79			70-130	Pass	
Benzo(g.h.i)perylene			%	73			70-130	Pass	
Benzo(k)fluoranthene			%	88			70-130	Pass	
Chrysene			%	74			70-130	Pass	
Dibenz(a.h)anthracene			%	98			70-130	Pass	
Fluoranthene			%	75			70-130	Pass	
Fluorene			%	72			70-130	Pass	
Indeno(1.2.3-cd)pyrene			%	94			70-130	Pass	
Naphthalene			%	71			70-130	Pass	
Phenanthrene			%	72			70-130	Pass	
Pyrene			%	75			70-130	Pass	
LCS - % Recovery									
% Clay			%	82			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	96			80-120	Pass	
Cadmium			%	86			80-120	Pass	
Chromium			%	99			80-120	Pass	
Copper			%	90			80-120	Pass	
Lead			%	100			80-120	Pass	
Mercury			%	108			75-125	Pass	
Nickel			%	102			80-120	Pass	
Zinc			%	106			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16		S18-J114652	CP	%	78		70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14	S18-JI14652	CP	%	83			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-JI14652	CP	%	95			70-130	Pass	
Acenaphthylene	S18-JI14652	CP	%	90			70-130	Pass	
Anthracene	S18-JI14652	CP	%	92			70-130	Pass	
Benz(a)anthracene	S18-JI14652	CP	%	78			70-130	Pass	
Benzo(a)pyrene	S18-JI14652	CP	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	S18-JI14652	CP	%	92			70-130	Pass	
Benzo(g,h,i)perylene	S18-JI14652	CP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S18-JI14652	CP	%	82			70-130	Pass	
Chrysene	S18-JI14652	CP	%	81			70-130	Pass	
Dibenz(a,h)anthracene	S18-JI14652	CP	%	78			70-130	Pass	
Fluoranthene	S18-JI14652	CP	%	72			70-130	Pass	
Fluorene	S18-JI14652	CP	%	92			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-JI14652	CP	%	79			70-130	Pass	
Naphthalene	S18-JI14652	CP	%	86			70-130	Pass	
Phenanthrene	S18-JI14652	CP	%	86			70-130	Pass	
Pyrene	S18-JI14652	CP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-JI14655	CP	%	81			70-130	Pass	
TRH C6-C10	S18-JI14655	CP	%	87			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-JI14655	CP	%	90			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-JI14655	CP	%	76			70-130	Pass	
Toluene	S18-JI14655	CP	%	79			70-130	Pass	
Ethylbenzene	S18-JI14655	CP	%	82			70-130	Pass	
m&p-Xylenes	S18-JI14655	CP	%	83			70-130	Pass	
o-Xylene	S18-JI14655	CP	%	85			70-130	Pass	
Xylenes - Total	S18-JI14655	CP	%	84			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-JI14655	CP	%	99			70-130	Pass	
Acenaphthylene	S18-JI14655	CP	%	99			70-130	Pass	
Anthracene	S18-JI14655	CP	%	123			70-130	Pass	
Benz(a)anthracene	S18-JI14655	CP	%	92			70-130	Pass	
Benzo(a)pyrene	S18-JI14655	CP	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	S18-JI14655	CP	%	94			70-130	Pass	
Benzo(g,h,i)perylene	S18-JI14655	CP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S18-JI14655	CP	%	106			70-130	Pass	
Chrysene	S18-JI14655	CP	%	128			70-130	Pass	
Dibenz(a,h)anthracene	S18-JI14655	CP	%	86			70-130	Pass	
Fluoranthene	S18-JI14655	CP	%	128			70-130	Pass	
Fluorene	S18-JI14655	CP	%	101			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-JI14655	CP	%	78			70-130	Pass	
Naphthalene	S18-JI14655	CP	%	99			70-130	Pass	
Phenanthrene	S18-JI14655	CP	%	101			70-130	Pass	
Pyrene	S18-JI14655	CP	%	128			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic	S18-JI14657	CP	%	102			75-125	Pass	
Cadmium	S18-JI14657	CP	%	90			75-125	Pass	
Chromium	S18-JI14657	CP	%	115			75-125	Pass	
Copper	S18-JI14657	CP	%	103			75-125	Pass	
Lead	S18-JI14657	CP	%	103			75-125	Pass	
Mercury	S18-JI14657	CP	%	101			70-130	Pass	
Nickel	S18-JI14657	CP	%	101			75-125	Pass	
Zinc	S18-JI14657	CP	%	102			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S18-JI14665	CP	%	86			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S18-JI14665	CP	%	97			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-JI14665	CP	%	108			70-130	Pass	
Acenaphthylene	S18-JI14665	CP	%	104			70-130	Pass	
Anthracene	S18-JI14665	CP	%	106			70-130	Pass	
Benz(a)anthracene	S18-JI14665	CP	%	89			70-130	Pass	
Benzo(a)pyrene	S18-JI14665	CP	%	73			70-130	Pass	
Benzo(b&j)fluoranthene	S18-JI14665	CP	%	82			70-130	Pass	
Benzo(g,h,i)perylene	S18-JI14665	CP	%	80			70-130	Pass	
Benzo(k)fluoranthene	S18-JI14665	CP	%	76			70-130	Pass	
Chrysene	S18-JI14665	CP	%	93			70-130	Pass	
Dibenz(a,h)anthracene	S18-JI14665	CP	%	77			70-130	Pass	
Fluoranthene	S18-JI14665	CP	%	84			70-130	Pass	
Fluorene	S18-JI14665	CP	%	108			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-JI14665	CP	%	84			70-130	Pass	
Naphthalene	S18-JI14665	CP	%	100			70-130	Pass	
Phenanthrene	S18-JI14665	CP	%	98			70-130	Pass	
Pyrene	S18-JI14665	CP	%	87			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-JI14667	CP	%	105			75-125	Pass	
Cadmium	S18-JI14667	CP	%	92			75-125	Pass	
Chromium	S18-JI14667	CP	%	114			75-125	Pass	
Copper	S18-JI14667	CP	%	104			75-125	Pass	
Lead	S18-JI14667	CP	%	108			75-125	Pass	
Mercury	S18-JI14667	CP	%	106			70-130	Pass	
Nickel	S18-JI14667	CP	%	106			75-125	Pass	
Zinc	S18-JI14667	CP	%	105			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S18-JI14651	CP	mg/kg	63	63	1.0	30%	Pass	
TRH >C16-C34	S18-JI14651	CP	mg/kg	320	360	11	30%	Pass	
TRH >C34-C40	S18-JI14651	CP	mg/kg	120	150	18	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S18-JI14651	CP	mg/kg	32	33	5.0	30%	Pass	
TRH C15-C28	S18-JI14651	CP	mg/kg	190	200	6.0	30%	Pass	
TRH C29-C36	S18-JI14651	CP	mg/kg	230	260	14	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-JI14651	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-JI14653	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-JI14653	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S18-JI14653	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-JI14653	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-JI14653	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-JI14653	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-JI14653	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-JI14653	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-JI14653	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-JI14656	CP	%	8.8	8.7	1.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-JI14656	CP	mg/kg	7.1	6.9	3.0	30%	Pass
Cadmium	S18-JI14656	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-JI14656	CP	mg/kg	17	16	4.0	30%	Pass
Copper	S18-JI14656	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	S18-JI14656	CP	mg/kg	14	15	11	30%	Pass
Mercury	S18-JI14656	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-JI14656	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-JI14656	CP	mg/kg	10	12	15	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-JI14657	CP	mg/kg	7.1	6.3	12	30%	Pass
Cadmium	S18-JI14657	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-JI14657	CP	mg/kg	19	19	1.0	30%	Pass
Copper	S18-JI14657	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	S18-JI14657	CP	mg/kg	10	10.0	3.0	30%	Pass
Mercury	S18-JI14657	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-JI14657	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-JI14657	CP	mg/kg	< 5	< 5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Clay	B17-Oc23882	NCP	%	28	26	5.0	30%	Pass
Conductivity (1:5 aqueous extract at 25°C as rec.)	M18-JI13251	NCP	uS/cm	77	78	1.8	30%	Pass
pH (1:5 Aqueous extract at 25°C as rec.)	M18-JI13393	NCP	pH Units	8.2	8.4	pass	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S18-JI14664	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-JI14664	CP	mg/kg	130	130	5.0	30%	Pass
TRH >C34-C40	S18-JI14664	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S18-JI14664	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S18-JI14664	CP	mg/kg	51	< 50	3.0	30%	Pass
TRH C29-C36	S18-JI14664	CP	mg/kg	110	100	5.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-JI14666	CP	%	7.0	7.2	4.0	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-JI14666	CP	mg/kg	4.7	5.7	19	30%	Pass
Cadmium	S18-JI14666	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-JI14666	CP	mg/kg	12	12	4.0	30%	Pass
Copper	S18-JI14666	CP	mg/kg	16	17	7.0	30%	Pass
Lead	S18-JI14666	CP	mg/kg	16	17	8.0	30%	Pass
Mercury	S18-JI14666	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-JI14666	CP	mg/kg	6.1	6.1	1.0	30%	Pass
Zinc	S18-JI14666	CP	mg/kg	47	53	14	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-JI14667	CP	mg/kg	4.7	4.5	3.0	30%	Pass
Cadmium	S18-JI14667	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-JI14667	CP	mg/kg	8.3	8.8	6.0	30%	Pass
Copper	S18-JI14667	CP	mg/kg	7.4	7.9	7.0	30%	Pass
Lead	S18-JI14667	CP	mg/kg	14	15	3.0	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Mercury	S18-Jl14667	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-Jl14667	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-Jl14667	CP	mg/kg	37	38	3.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Inorganic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Michael Brancati	Senior Analyst-Inorganic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

WSP Australia P/L NSW
 Level 27, Ernst & Young Centre
 Sydney
 NSW 2001



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Alexander Carpenter

Report 607407-W
 Project name SAMUEL GILBERT PUBLIC SCHOOL ESA
 Project ID PS110639
 Received Date Jul 12, 2018

Client Sample ID			R_11072018	R_12072018
Sample Matrix			Water	Water
Eurofins mgt Sample No.			S18-JI14677	S18-JI14678
Date Sampled			Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1
BTEX				
Benzene	0.001	mg/L	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	107	109
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.01	mg/L	< 0.01	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.001	mg/L	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001

Client Sample ID			R_11072018	R_12072018
Sample Matrix			Water	Water
Eurofins mgt Sample No.			S18-JI14677	S18-JI14678
Date Sampled			Jul 11, 2018	Jul 11, 2018
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.001	mg/L	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	86	84
p-Terphenyl-d14 (surr.)	1	%	107	117
Heavy Metals				
Arsenic	0.001	mg/L	< 0.001	< 0.001
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002
Chromium	0.001	mg/L	< 0.001	< 0.001
Copper	0.001	mg/L	< 0.001	< 0.001
Lead	0.001	mg/L	< 0.001	< 0.001
Mercury	0.0001	mg/L	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	< 0.001
Zinc	0.005	mg/L	< 0.005	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
 A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).
 If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C36	Melbourne	Jul 17, 2018	7 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 16, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 16, 2018	7 Day
Eurofins mgt Suite B7			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Melbourne	Jul 17, 2018	7 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Jul 17, 2018	7 Day
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Jul 16, 2018	28 Days

Company Name: WSP Australia P/L NSW
Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001
Project Name: SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID: PS110639

Order No.:
Report #: 607407
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Jul 12, 2018 6:27 PM
Due: Jul 20, 2018
Priority: 5 Day
Contact Name: Alexander Carpenter

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	TP01-0.4	Jul 11, 2018		Soil	S18-JI14650		X			X		X	
2	TP03-0.1	Jul 11, 2018		Soil	S18-JI14651		X			X		X	
3	TP04-0.1	Jul 11, 2018		Soil	S18-JI14652		X			X		X	
4	TP05-0.2	Jul 11, 2018		Soil	S18-JI14653		X			X		X	
5	TP06-0.3	Jul 11, 2018		Soil	S18-JI14654		X			X		X	
6	TP07-0.3	Jul 11, 2018		Soil	S18-JI14655		X			X		X	
7	TP08-0.1	Jul 11, 2018		Soil	S18-JI14656		X			X		X	
8	TP09-0.1	Jul 11, 2018		Soil	S18-JI14657		X			X		X	
9	TP10-0.1	Jul 11, 2018		Soil	S18-JI14658	X	X		X	X	X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
10	TP11-0.1	Jul 11, 2018		Soil	S18-J114659		X			X		X	
11	TP12-0.1	Jul 11, 2018		Soil	S18-J114660		X			X		X	
12	TP12-0.9	Jul 11, 2018		Soil	S18-J114661					X		X	
13	HA01-0.4	Jul 11, 2018		Soil	S18-J114662		X			X		X	
14	HA02-0.4	Jul 11, 2018		Soil	S18-J114663		X			X		X	
15	HA03-0.1	Jul 11, 2018		Soil	S18-J114664		X			X		X	
16	HA03-0.9	Jul 11, 2018		Soil	S18-J114665					X		X	
17	HA04-0.1	Jul 11, 2018		Soil	S18-J114666		X			X		X	
18	HA05-0.1	Jul 11, 2018		Soil	S18-J114667		X			X		X	
19	HA06-0.1	Jul 11, 2018		Soil	S18-J114668		X						
20	HA06-0.5	Jul 11, 2018		Soil	S18-J114669					X		X	
21	HA07-0.2	Jul 11, 2018		Soil	S18-J114670		X			X		X	

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
22	HA08-0.2	Jul 11, 2018		Soil	S18-JI14671		X			X		X	
23	HA09-0.8	Jul 11, 2018		Soil	S18-JI14672		X			X		X	
24	QA01	Jul 11, 2018		Soil	S18-JI14673					X		X	
25	TB01	Jul 11, 2018		Soil	S18-JI14674								X
26	TS01	Jul 11, 2018		Soil	S18-JI14675								X
27	R_11072018	Jul 11, 2018		Water	S18-JI14677							X	
28	R_12072018	Jul 11, 2018		Water	S18-JI14678							X	
29	TP02-0.1	Jul 11, 2018		Soil	S18-JI15309			X					
30	TP02-0.6	Jul 11, 2018		Soil	S18-JI15310			X					
31	TP03-0.6	Jul 11, 2018		Soil	S18-JI15311			X					
32	TP04-0.8	Jul 11, 2018		Soil	S18-JI15312			X					
33	TP05-1.1	Jul 11, 2018		Soil	S18-JI15313			X					

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Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
34	TP06-0.7	Jul 11, 2018		Soil	S18-Jl15314			X					
35	TP07-0.9	Jul 11, 2018		Soil	S18-Jl15315			X					
36	TP08-0.6	Jul 11, 2018		Soil	S18-Jl15316			X					
37	TP09-0.8	Jul 11, 2018		Soil	S18-Jl15317			X					
38	TP10-0.8	Jul 11, 2018		Soil	S18-Jl15318			X					
39	TP11-1.0	Jul 11, 2018		Soil	S18-Jl15319			X					
40	HA04-0.7	Jul 11, 2018		Soil	S18-Jl15321			X					
41	HA05-0.4	Jul 11, 2018		Soil	S18-Jl15322			X					
42	HA07-1.2	Jul 11, 2018		Soil	S18-Jl15323			X					
43	HA09-0.1	Jul 11, 2018		Soil	S18-Jl15324			X					
44	QA02	Jul 11, 2018		Soil	S18-Jl15325			X					
45	QA02A	Jul 11, 2018		Soil	S18-Jl17154			X					

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail	% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
			X	X	X	X	X	X
		X					X	X
	X							
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X					X	X
Brisbane Laboratory - NATA Site # 20794	X							
Perth Laboratory - NATA Site # 23736								
Test Counts	1	20	17	1	23	1	25	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	106			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C10-C14			%	96			70-130	Pass	
LCS - % Recovery									
BTEX									
Benzene		%	100				70-130	Pass	
Toluene		%	93				70-130	Pass	
Ethylbenzene		%	95				70-130	Pass	
m&p-Xylenes		%	91				70-130	Pass	
Xylenes - Total		%	92				70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
Naphthalene		%	85				70-130	Pass	
TRH C6-C10		%	111				70-130	Pass	
TRH >C10-C16		%	82				70-130	Pass	
LCS - % Recovery									
Polycyclic Aromatic Hydrocarbons									
Acenaphthene		%	73				70-130	Pass	
Acenaphthylene		%	72				70-130	Pass	
Anthracene		%	91				70-130	Pass	
Benz(a)anthracene		%	99				70-130	Pass	
Benzo(a)pyrene		%	93				70-130	Pass	
Benzo(b&j)fluoranthene		%	99				70-130	Pass	
Benzo(g,h,i)perylene		%	111				70-130	Pass	
Benzo(k)fluoranthene		%	106				70-130	Pass	
Chrysene		%	101				70-130	Pass	
Dibenz(a,h)anthracene		%	94				70-130	Pass	
Fluoranthene		%	123				70-130	Pass	
Fluorene		%	84				70-130	Pass	
Indeno(1.2.3-cd)pyrene		%	105				70-130	Pass	
Naphthalene		%	79				70-130	Pass	
Phenanthrene		%	93				70-130	Pass	
Pyrene		%	121				70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic		%	95				80-120	Pass	
Cadmium		%	84				80-120	Pass	
Chromium		%	97				80-120	Pass	
Copper		%	86				80-120	Pass	
Lead		%	95				80-120	Pass	
Mercury		%	85				75-125	Pass	
Nickel		%	93				80-120	Pass	
Zinc		%	96				80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-JI16770	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-JI16770	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	M18-JI16302	NCP	%	113			70-130	Pass	
Acenaphthylene	M18-JI16302	NCP	%	115			70-130	Pass	
Anthracene	M18-JI16302	NCP	%	104			70-130	Pass	
Benz(a)anthracene	M18-JI16302	NCP	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	M18-JI16302	NCP	%	122			70-130	Pass	
Benzo(b&j)fluoranthene	M18-JI16302	NCP	%	114			70-130	Pass	
Benzo(g,h,i)perylene	M18-JI16302	NCP	%	119			70-130	Pass	
Benzo(k)fluoranthene	M18-JI16302	NCP	%	127			70-130	Pass	
Chrysene	M18-JI16302	NCP	%	113			70-130	Pass	
Dibenz(a,h)anthracene	M18-JI16302	NCP	%	101			70-130	Pass	
Fluoranthene	M18-JI16302	NCP	%	125			70-130	Pass	
Fluorene	M18-JI16302	NCP	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	M18-JI16302	NCP	%	110			70-130	Pass	
Naphthalene	M18-JI16302	NCP	%	110			70-130	Pass	
Phenanthrene	M18-JI16302	NCP	%	113			70-130	Pass	
Pyrene	M18-JI16302	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-JI14677	CP	%	98			75-125	Pass	
Cadmium	S18-JI14677	CP	%	99			75-125	Pass	
Chromium	S18-JI14677	CP	%	101			75-125	Pass	
Copper	S18-JI14677	CP	%	101			75-125	Pass	
Lead	S18-JI14677	CP	%	104			75-125	Pass	
Mercury	S18-JI14677	CP	%	93			70-130	Pass	
Nickel	S18-JI14677	CP	%	100			75-125	Pass	
Zinc	S18-JI14677	CP	%	101			75-125	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-JI11761	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M18-JI15745	NCP	mg/L	1.0	1.1	6.0	30%	Pass	
TRH C15-C28	M18-JI15745	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M18-JI15745	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-JI11761	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S18-JI11761	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S18-JI11761	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S18-JI11761	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S18-JI11761	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S18-JI11761	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-JI11761	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S18-JI11761	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH >C10-C16	M18-JI15745	NCP	mg/L	0.87	1.1	19	30%	Pass	
TRH >C16-C34	M18-JI15745	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	M18-JI15745	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g,h,i)perylene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	M18-JI16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Chrysene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M18-Jl16301	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-Jl14677	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Cadmium	S18-Jl14677	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium	S18-Jl14677	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper	S18-Jl14677	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Lead	S18-Jl14677	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury	S18-Jl14677	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel	S18-Jl14677	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Zinc	S18-Jl14677	CP	mg/L	< 0.005	< 0.005	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

WSP Australia P/L NSW
Level 27, Ernst & Young Centre
Sydney
NSW 2001

Attention:	Alexander Carpenter
Report	607407-AID
Project Name	SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID	PS110639
Received Date	Jul 12, 2018
Date Reported	Jul 20, 2018

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. <i>NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.</i>
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. <i>NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.</i>
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. <i>NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.</i>
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004. <i>NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.</i>
Limit of Reporting	The performance limitation of the AS4964 method for inhomogeneous samples is around 0.1 g/kg (0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis where required, this is considered to be at the nominal reporting limit of 0.01 % (w / w). The examination of large sample sizes (500 mL is recommended) may improve the likelihood of identifying ACM in the > 2mm fraction. The NEPM screening level of 0.001 % (w / w) asbestos in soil for FA (friable asbestos) and AF (asbestos fines) then applies where they are able to be quantified by gravimetric procedures. This quantitative screening is not generally applicable to FF (free fibres) and results of Trace Analysis are referred. <i>NOTE: NATA News March 2014, p.7, states in relation to AS4964: "This is a qualitative method with a nominal reporting limit of 0.01%" and that currently in Australia "there is no validated method available for the quantification of asbestos". Accordingly, NATA Accreditation does not cover the performance of this service (indicated with an asterisk). This report is consistent with the analytical procedures and reporting recommendations in the National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended) and the Western Australia Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia, 2009, including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil, June 2011.</i>

Project Name SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID PS110639
Date Sampled Jul 11, 2018
Report 607407-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
TP01-0.4	18-JI14650	Jul 11, 2018	Approximate Sample 501g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP03-0.1	18-JI14651	Jul 11, 2018	Approximate Sample 370g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP04-0.1	18-JI14652	Jul 11, 2018	Approximate Sample 567g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP05-0.2	18-JI14653	Jul 11, 2018	Approximate Sample 510g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP06-0.3	18-JI14654	Jul 11, 2018	Approximate Sample 455g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP07-0.3	18-JI14655	Jul 11, 2018	Approximate Sample 485g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP08-0.1	18-JI14656	Jul 11, 2018	Approximate Sample 648g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP09-0.1	18-JI14657	Jul 11, 2018	Approximate Sample 673g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP10-0.1	18-JI14658	Jul 11, 2018	Approximate Sample 727g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
TP11-0.1	18-JI14659	Jul 11, 2018	Approximate Sample 853g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
TP12-0.1	18-JI14660	Jul 11, 2018	Approximate Sample 921g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA01-0.4	18-JI14662	Jul 11, 2018	Approximate Sample 869g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA02-0.4	18-JI14663	Jul 11, 2018	Approximate Sample 760g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA03-0.1	18-JI14664	Jul 11, 2018	Approximate Sample 620g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA04-0.1	18-JI14666	Jul 11, 2018	Approximate Sample 841g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA05-0.1	18-JI14667	Jul 11, 2018	Approximate Sample 813g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA06-0.1	18-JI14668	Jul 11, 2018	Approximate Sample 817g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA07-0.2	18-JI14670	Jul 11, 2018	Approximate Sample 763g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA08-0.2	18-JI14671	Jul 11, 2018	Approximate Sample 711g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.
HA09-0.8	18-JI14672	Jul 11, 2018	Approximate Sample 827g Sample consisted of: Brown coarse grain soil and rocks	No asbestos detected at the reporting limit of 0.001% w/w.* Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jul 13, 2018	Indefinite

Company Name: WSP Australia P/L NSW
Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001

Project Name: SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID: PS110639

Order No.:
Report #: 607407
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Jul 12, 2018 6:27 PM
Due: Jul 20, 2018
Priority: 5 Day
Contact Name: Alexander Carpenter

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	TP01-0.4	Jul 11, 2018		Soil	S18-JI14650		X			X		X	
2	TP03-0.1	Jul 11, 2018		Soil	S18-JI14651		X			X		X	
3	TP04-0.1	Jul 11, 2018		Soil	S18-JI14652		X			X		X	
4	TP05-0.2	Jul 11, 2018		Soil	S18-JI14653		X			X		X	
5	TP06-0.3	Jul 11, 2018		Soil	S18-JI14654		X			X		X	
6	TP07-0.3	Jul 11, 2018		Soil	S18-JI14655		X			X		X	
7	TP08-0.1	Jul 11, 2018		Soil	S18-JI14656		X			X		X	
8	TP09-0.1	Jul 11, 2018		Soil	S18-JI14657		X			X		X	
9	TP10-0.1	Jul 11, 2018		Soil	S18-JI14658	X	X		X	X	X	X	

Company Name: WSP Australia P/L NSW
Address: Level 27, Ernst & Young Centre
Sydney
NSW 2001

Project Name: SAMUEL GILBERT PUBLIC SCHOOL ESA
Project ID: PS110639

Order No.:
Report #: 607407
Phone: 02 9272 5586
Fax: 02 9272 5101

Received: Jul 12, 2018 6:27 PM
Due: Jul 20, 2018
Priority: 5 Day
Contact Name: Alexander Carpenter

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - WA guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
10	TP11-0.1	Jul 11, 2018		Soil	S18-JI14659		X			X		X	
11	TP12-0.1	Jul 11, 2018		Soil	S18-JI14660		X			X		X	
12	TP12-0.9	Jul 11, 2018		Soil	S18-JI14661					X		X	
13	HA01-0.4	Jul 11, 2018		Soil	S18-JI14662		X			X		X	
14	HA02-0.4	Jul 11, 2018		Soil	S18-JI14663		X			X		X	
15	HA03-0.1	Jul 11, 2018		Soil	S18-JI14664		X			X		X	
16	HA03-0.9	Jul 11, 2018		Soil	S18-JI14665					X		X	
17	HA04-0.1	Jul 11, 2018		Soil	S18-JI14666		X			X		X	
18	HA05-0.1	Jul 11, 2018		Soil	S18-JI14667		X			X		X	
19	HA06-0.1	Jul 11, 2018		Soil	S18-JI14668		X						
20	HA06-0.5	Jul 11, 2018		Soil	S18-JI14669					X		X	
21	HA07-0.2	Jul 11, 2018		Soil	S18-JI14670		X			X		X	

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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
22	HA08-0.2	Jul 11, 2018		Soil	S18-JI14671		X			X		X	
23	HA09-0.8	Jul 11, 2018		Soil	S18-JI14672		X			X		X	
24	QA01	Jul 11, 2018		Soil	S18-JI14673					X		X	
25	TB01	Jul 11, 2018		Soil	S18-JI14674								X
26	TS01	Jul 11, 2018		Soil	S18-JI14675								X
27	R_11072018	Jul 11, 2018		Water	S18-JI14677							X	
28	R_12072018	Jul 11, 2018		Water	S18-JI14678							X	
29	TP02-0.1	Jul 11, 2018		Soil	S18-JI15309			X					
30	TP02-0.6	Jul 11, 2018		Soil	S18-JI15310			X					
31	TP03-0.6	Jul 11, 2018		Soil	S18-JI15311			X					
32	TP04-0.8	Jul 11, 2018		Soil	S18-JI15312			X					
33	TP05-1.1	Jul 11, 2018		Soil	S18-JI15313			X					

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
34	TP06-0.7	Jul 11, 2018		Soil	S18-Jl15314			X					
35	TP07-0.9	Jul 11, 2018		Soil	S18-Jl15315			X					
36	TP08-0.6	Jul 11, 2018		Soil	S18-Jl15316			X					
37	TP09-0.8	Jul 11, 2018		Soil	S18-Jl15317			X					
38	TP10-0.8	Jul 11, 2018		Soil	S18-Jl15318			X					
39	TP11-1.0	Jul 11, 2018		Soil	S18-Jl15319			X					
40	HA04-0.7	Jul 11, 2018		Soil	S18-Jl15321			X					
41	HA05-0.4	Jul 11, 2018		Soil	S18-Jl15322			X					
42	HA07-1.2	Jul 11, 2018		Soil	S18-Jl15323			X					
43	HA09-0.1	Jul 11, 2018		Soil	S18-Jl15324			X					
44	QA02	Jul 11, 2018		Soil	S18-Jl15325			X					
45	QA02A	Jul 11, 2018		Soil	S18-Jl17154			X					

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Sample Detail	% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217		X					X	X
Brisbane Laboratory - NATA Site # 20794	X							
Perth Laboratory - NATA Site # 23736								
Test Counts	1	20	17	1	23	1	25	2

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Western Australia Department of Health
NOHSC	National Occupational Health and Safety Commission
ACM	Bonded asbestos-containing material means any material containing more than 1% asbestos and comprises asbestos-containing-material which is in sound condition, although possibly broken or fragmented, and where the asbestos is bound in a matrix such as cement or resin. Common examples of ACM include but are not limited to: pipe and boiler insulation, sprayed-on fireproofing, troweled-on acoustical plaster, floor tile and mastic, floor linoleum, transite shingles, roofing materials, wall and ceiling plaster, ceiling tiles, and gasket materials. This term is restricted to material that cannot pass a 7 mm x 7 mm sieve. This sieve size is selected because it approximates the thickness of common asbestos cement sheeting and for fragments to be smaller than this would imply a high degree of damage and hence potential for fibre release.
FA	FA comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. This type of friable asbestos is defined here as asbestos material that is in a degraded condition such that it can be broken or crumbled by hand pressure. This material is typically unbonded or was previously bonded and is now significantly degraded (crumbling).
PACM	Presumed Asbestos-Containing Material means thermal system insulation and surfacing material found in buildings, vessels, and vessel sections constructed no later than 1980 that are assumed to contain greater than one percent asbestos but have not been sampled or analyzed to verify or negate the presence of asbestos.
AF	Asbestos fines (AF) are defined as free fibres, or fibre bundles, smaller than 7mm. It is the free fibres which present the greatest risk to human health, although very small fibres (< 5 microns in length) are not considered to be such a risk. AF also includes small fragments of bonded ACM that pass through a 7 mm x 7 mm sieve. (Note that for bonded ACM fragments to pass through a 7 mm x 7 mm sieve implies a substantial degree of damage which increases the potential for fibre release.)
AC	Asbestos cement means a mixture of cement and asbestos fibres (typically 90:10 ratios).

Comments

Samples JI14651, JI14654 and JI14655 received were less than the nominal 500mL as recommended in Section 4.10 of the NEPM Schedule B1 - Guideline on Investigation Levels for Soil and Groundwater.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayed Abu Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias Senior Analyst-Asbestos (NSW)



Glenn Jackson
National Operations Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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NSW 2001
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Received: Jul 12, 2018 6:27 PM
Due: Jul 20, 2018
Priority: 5 Day
Contact Name: Alexander Carpenter

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEXN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	TP01-0.4	Jul 11, 2018		Soil	S18-JI14650		X			X		X	
2	TP03-0.1	Jul 11, 2018		Soil	S18-JI14651		X			X		X	
3	TP04-0.1	Jul 11, 2018		Soil	S18-JI14652		X			X		X	
4	TP05-0.2	Jul 11, 2018		Soil	S18-JI14653		X			X		X	
5	TP06-0.3	Jul 11, 2018		Soil	S18-JI14654		X			X		X	
6	TP07-0.3	Jul 11, 2018		Soil	S18-JI14655		X			X		X	
7	TP08-0.1	Jul 11, 2018		Soil	S18-JI14656		X			X		X	
8	TP09-0.1	Jul 11, 2018		Soil	S18-JI14657		X			X		X	
9	TP10-0.1	Jul 11, 2018		Soil	S18-JI14658	X	X		X	X	X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
10	TP11-0.1	Jul 11, 2018		Soil	S18-JI14659		X			X		X	
11	TP12-0.1	Jul 11, 2018		Soil	S18-JI14660		X			X		X	
12	TP12-0.9	Jul 11, 2018		Soil	S18-JI14661					X		X	
13	HA01-0.4	Jul 11, 2018		Soil	S18-JI14662		X			X		X	
14	HA02-0.4	Jul 11, 2018		Soil	S18-JI14663		X			X		X	
15	HA03-0.1	Jul 11, 2018		Soil	S18-JI14664		X			X		X	
16	HA03-0.9	Jul 11, 2018		Soil	S18-JI14665					X		X	
17	HA04-0.1	Jul 11, 2018		Soil	S18-JI14666		X			X		X	
18	HA05-0.1	Jul 11, 2018		Soil	S18-JI14667		X			X		X	
19	HA06-0.1	Jul 11, 2018		Soil	S18-JI14668		X						
20	HA06-0.5	Jul 11, 2018		Soil	S18-JI14669					X		X	
21	HA07-0.2	Jul 11, 2018		Soil	S18-JI14670		X			X		X	

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
22	HA08-0.2	Jul 11, 2018		Soil	S18-JI14671		X			X		X	
23	HA09-0.8	Jul 11, 2018		Soil	S18-JI14672		X			X		X	
24	QA01	Jul 11, 2018		Soil	S18-JI14673					X		X	
25	TB01	Jul 11, 2018		Soil	S18-JI14674								X
26	TS01	Jul 11, 2018		Soil	S18-JI14675								X
27	R_11072018	Jul 11, 2018		Water	S18-JI14677							X	
28	R_12072018	Jul 11, 2018		Water	S18-JI14678							X	
29	TP02-0.1	Jul 11, 2018		Soil	S18-JI15309			X					
30	TP02-0.6	Jul 11, 2018		Soil	S18-JI15310			X					
31	TP03-0.6	Jul 11, 2018		Soil	S18-JI15311			X					
32	TP04-0.8	Jul 11, 2018		Soil	S18-JI15312			X					
33	TP05-1.1	Jul 11, 2018		Soil	S18-JI15313			X					

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Sample Detail						% Clay	Asbestos - W/A guidelines	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Moisture Set	Cation Exchange Capacity	Eurofins mgt Suite B7	BTEN and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217							X					X	X
Brisbane Laboratory - NATA Site # 20794						X							
Perth Laboratory - NATA Site # 23736													
34	TP06-0.7	Jul 11, 2018		Soil	S18-Jl15314			X					
35	TP07-0.9	Jul 11, 2018		Soil	S18-Jl15315			X					
36	TP08-0.6	Jul 11, 2018		Soil	S18-Jl15316			X					
37	TP09-0.8	Jul 11, 2018		Soil	S18-Jl15317			X					
38	TP10-0.8	Jul 11, 2018		Soil	S18-Jl15318			X					
39	TP11-1.0	Jul 11, 2018		Soil	S18-Jl15319			X					
40	HA04-0.7	Jul 11, 2018		Soil	S18-Jl15321			X					
41	HA05-0.4	Jul 11, 2018		Soil	S18-Jl15322			X					
42	HA07-1.2	Jul 11, 2018		Soil	S18-Jl15323			X					
43	HA09-0.1	Jul 11, 2018		Soil	S18-Jl15324			X					
44	QA02	Jul 11, 2018		Soil	S18-Jl15325			X					
45	QA02A	Jul 11, 2018		Soil	S18-Jl17154			X					

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Sample Detail

Sample Detail								
BTEXN and Volatile TRH	Eurofins mgt Suite B7	Cation Exchange Capacity	Moisture Set	pH (1:5 Aqueous extract at 25°C as rec.)	HOLD	Asbestos - WA guidelines	% Clay	
Melbourne Laboratory - NATA Site # 1254 & 14271	X	X	X	X	X			
Sydney Laboratory - NATA Site # 18217	X					X		
Brisbane Laboratory - NATA Site # 20794							X	
Perth Laboratory - NATA Site # 23736								
Test Counts	25	1	23	1	17	20	1	

APPENDIX H

QAQC RESULTS



Table H1
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

		>C6-C10	>C10-C16	F3: >C16-C34	F4: >C34-C40	Total >C10 - C40	Benzene	Toluene	Ethylbenzene	m- & p-Xylene	o-Xylene	Total xylene	Naphthalene
HA07-0.2	607407	< 20	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
QA01	607407	< 20	<50	<100	<100	<100	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
RPD (%)		-	-	-	-	-	-	-	-	-	-	-	-
HA07-0.2	607407	< 20	<50	<i><100</i>	<i><100</i>	<i><100</i>	< 0.1	< 0.1	< 0.1	< 0.2	< 0.1	<0.3	< 0.5
QA02	SE181538	< 25	<25	<90	<120	<210	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	< 0.1
RPD (%)		-	-	-	-	-	-	-	-	-	-	-	-

Notes:

All results are expressed in mg/kg for soil or µg/L for groundwater

Italics: A value equal to the PQL has been used for the calculation of RPDs

BOLD

RPD exceeds acceptable levels.

Table H2
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

		Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benz(a)anthracene	Chrysene	Benzo(b+g)fluoranthene	Benzo(k)fluoranthene	Benzo(a)pyrene	Indeno(1,2,3-cd)pyrene	Dibenz(a,h)anthracene	Benzo(g,h,i)perylene	Total PAH	Benzo(a)pyrene TEQ
HA07-0.2	607407	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA01	607407	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
RPD (%)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
HA07-0.2	607407	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
QA02	SE181538	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
RPD (%)		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:
All results are expressed in mg/kg
Italics: A value equal to the PQL has been used for the calculation of RPDs

BOLD	RPD exceeds acceptable levels.
-------------	--------------------------------

Table H3
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

		Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
HA07-0.2	607407	5	< 0.4	17	19	13	< 0.1	27	50
QA01	607407	2	< 0.4	13	21	13	< 0.1	23	73
RPD (%)		86%	-	27%	10%	0%	-	16%	37%
HA07-0.2	607407	5	< 0.4	17	19	13	< 0.1	27	50
QA02	SE181538	4	<0.3	9.7	17	10	<0.05	15	42
RPD (%)		22%	-	55%	11%	26%	-	40%	17%

Notes:

All results are expressed in mg/kg

Italics: A value equal to the PQL has been used for the calculation of RPDs

BOLD

RPD exceeds acceptable levels.

Table H4 Summary results of QA/QC - Rinsates and trip blanks
Samuel Gilbert Public School DSI
Ridgecrop Drive, Caste Hill, NSW

Type of sample	Rinsate blanks		Trip blanks/spikes	
Sample ID	R_11072018	R_12072018	TB01	TS01
Date sampled	11/07/18	12/07/18	11/07/18	11/07/18
Laboratory report no.	607407	607407	607407	607407
Total recoverable hydrocarbons				
F1: C6-C10 less BTEX	<20	<20	<20	
F2: >C10-C16 less naphthalene	<100	<100	-	-
>C10-C16	<100	<100	-	-
F3: >C16-C34	<100	<100	-	-
F4: >C34-C40	<100	<100	-	-
Total >C10 - C40	<100	<100	-	-
C6-C9	<20	<20	-	-
C10-C14	<50	<50	-	-
C15-C28	<100	<100	-	-
C29-C36	<50	<50	-	-
Total C10-C36	<50	<50	-	-
Aromatic hydrocarbons				
Benzene	<1	<1	<0.2	91%
Toluene	<1	<1	<0.5	100%
Ethylbenzene	<1	<1	<0.5	100%
m- & p-Xylene	<2	<2	<0.5	100%
o-Xylene	<1	<1	<0.5	110%
Total Xylenes	<3	<3	<0.5	110%
Naphthalene	<10	<10	<0.5	-
Polycyclic aromatic hydrocarbons				
Naphthalene	<1.0	<1.0	-	-
Acenaphthylene	<1.0	<1.0	-	-
Acenaphthene	<1.0	<1.0	-	-
Fluorene	<1.0	<1.0	-	-
Phenanthrene	<1.0	<1.0	-	-
Anthracene	<1.0	<1.0	-	-
Fluoranthene	<1.0	<1.0	-	-
Pyrene	<1.0	<1.0	-	-
Benz(a)anthracene	<1.0	<1.0	-	-
Chrysene	<1.0	<1.0	-	-
Benzo(b+j)fluoranthene	<1.0	<1.0	-	-
Benzo(k)fluoranthene	<1.0	<1.0	-	-
Benzo(a)pyrene	<0.5	<0.5	-	-
Indeno(1.2.3.cd)pyrene	<1.0	<1.0	-	-
Dibenz(a.h)anthracene	<1.0	<1.0	-	-
Benzo(g.h.i)perylene	<1.0	<1.0	-	-
Total PAH	<0.5	<0.5	-	-
Benzo(a)pyrene TEQ	<0.5	<0.5	-	-
Total dissolved metals				
Arsenic	<0.001	<0.001	-	
Cadmium	<0.0001	<0.0001	-	
Chromium	<0.001	<0.001	-	
Copper	<0.001	<0.001	-	
Nickel	<0.001	<0.001	-	
Lead	<0.001	<0.001	-	
Zinc	<0.005	<0.005	-	
Mercury	<0.0001	<0.0001	-	

APPENDIX I

BORELOGS



TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

HA01

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **11/7/18**
Date Completed: **11/7/18**
Recorded By: **AW**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

[illegible]



TEST PIT ENVIRONMENTAL LOG

HA02

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **11/7/18**
Date Completed: **11/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE VS FB VL S F L MD ST D VST D H VD	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
							Silty Clay: medium plasticity, orange/brown, low strength, siltstone inclusions			
							END OF TEST PIT AT 0.50 m			



TEST PIT ENVIRONMENTAL LOG

HA03

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
		PID=0.1 ppm					Sandy silt: fine grained, brown loose, inclusions of organic material, roots and plastic				HA03_0.1
	0.50						Silty Clay: low plasticity, light brown, low strength and large siltstone inclusions <60mm and roots				
		PID=0.1 ppm						D			HA03_0.9
	1										
							END OF TEST PIT AT 1.50 m				



TEST PIT ENVIRONMENTAL LOG

HA04

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
								VS FB VL S F L MD ST D VST D H VD			
		PID=0.1 ppm					Silty Gravelly Sand: dark brown, loose, inclusions of angular rock, organic matter and plastic	D			HA04_0.1
	0.20						Silty Clay: low plasticity, light brown, low strength with inclusions of siltstone and organic matter				
		PID=0.1 ppm					Sandstone: white/yellow, hard				HA04_0.7
	0.80						END OF TEST PIT AT 0.90 m				
	1										



TEST PIT ENVIRONMENTAL LOG

HA05

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
								VS FB VL S F L MD ST D VST D H VD			
		PID=0.1 ppm					Sandy silt: fine to medium grained, loose, dark brown, inclusions of organic matter and small rocks				HA05_0.1
	0.15						Silty Clay: low plasticity, light brown, low strength, siltstone inclusions <50mm				
		PID=0.1 ppm						D			HA05_0.4
							END OF TEST PIT AT 0.60 m				Refusal - potentiall concrete slab

TEST PIT ENVIRONMENTAL LOG

TEST PIT NO.

HA06

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgescrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE VS FB VL L MD VS D H	RELATIVE DENSITY /CONSISTENCY	PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
		PID=0.1 ppm				Sandy Silt: dark brown, loose, inclusions of organic matter, woodchips, plastic and blue metal	M			HA06_0.1
	0.20					Silty Clay: low plasticity, light brown, low strength, inclusions of siltstone <40mm and roots	D			HA06_0.5
		PID=0.1 ppm								
	0.90					Sandstone: red/white/yellow, hard				
	1									
						END OF TEST PIT AT 1.10 m				



TEST PIT ENVIRONMENTAL LOG

HA07

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
							Sandy Silt: fine grained, brown, loose, dry, inclusions of organic material	D			HA02_0.2 QA01/QA01A
		0.30					Silty Clay: medium plasticity, light brown, moist, medium strength, inclusions of siltstone	M			
		0.90					Clay: Low plasticity, red/yellow mottles, high strength, moist	M			
		1									HA07_1.2
			PID=0.1 ppm								
							END OF TEST PIT AT 1.50 m				



TEST PIT ENVIRONMENTAL LOG

HA08

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
							Sandy Silt: fine grained, dark brown, loose, slightly moist, inclusions of organic material, roots, mulch, large sandstone rocks and bricks.				HA08_0.2
							END OF TEST PIT AT 0.50 m				Refusal



TEST PIT ENVIRONMENTAL LOG

Ha09

SHEET 1 OF 1

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **Ps110639**

Date Commenced: **12/7/18**
Date Completed: **12/7/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION (SOIL NAME; plasticity/grain size, colour, particle shape, secondary components, minor constituents, moisture, relative density/consistency) (ROCK NAME; grain size, colour, weathering, strength, minor constituents)	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS (Defects - depth, type, orientation, spacing, planarity, roughness, thickness, coating)
		PID=0.1 ppm					Sandy Silt: fine grained, dark brown, loose, inclusions of mulch and organic matter				HA09_0.2 QA02/QA02A
	0.20						Silty clay: low plasticity, light brown, dry, low strength, large siltstone inclusions <50mm				
		PID=0.1 ppm					CLAY: low plasticity, red/yellow mottles, high strength, sandstone inclusions				HA09_0.8
	0.80										
	1						END OF TEST PIT AT 1.00 m				



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL L MD ST MD VST D H VD		
							Fill: Silty SAND: brown, dry, loose, woodchips, small rock inclusions and organic material			
		0.15					Fill: Silty CLAY, brown, dry, low strength			
			PID=0.2 ppm	B&J						TP01_0.4
		0.50					Silty Clay: orange/brown, low strength, siltstone inclusions			
							END OF TEST PIT AT 0.75 m			
		1								

This test pit log should be read in conjunction with WSP's accompanying standard notes.



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL SL ST F MD D VD			
		0.15					FILL: Silty SAND: brown, dry, loose, inclusions of organic material and roots				
			PID=0.1 ppm				Clay, medium plasticity, red/orange/brown mottled, high strength, small rock inclusions <30mm				TP03_0.1
		0.40					Shale: weathered, dry, red/orange/white				
			PID=0.1 ppm								TP03_0.6
							END OF TEST PIT AT 0.80 m				
		1									

Test Pit Log Form
Form No. 1
Revised 10/01
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WSP Environmental Technology Inc.

This test pit log should be read in conjunction with WSP's accompanying standard notes.

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TP04

SHEET 1 OF 1

Client:	Fulton Trotter Architects
Project:	Samuel Gilbert Public School
Test Pit Location:	Ridgecrop Dr, Castle Hill NSW 2154
Project Number:	PS110639

Date Commenced: 7/11/18
Date Completed: 7/11/18
Recorded By: AC
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS	FB		
								L	L		
								ST	MD		
								ST	D		
								H	VD		

This test pit log should be read in conjunction with WSP's accompanying standard notes.



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL SL ST F MD VST D H			
		0.10					FILL: Silty SAND; fine to medium grained, brown, loose, dry, inclusions of organic material				
			PID=0.1 ppm				Fill: Silty Clay, medium plasticity, brown, dry, low strength				TP05_0.2
		0.50					Clay: low plasticity, orange/brown, dry, low strength, inclusions of ironstone <70mm, weathered sandstone, organic material and roots.				
		1									TP05_1.1
			PID=0.1 ppm								
							END OF TEST PIT AT 1.20 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AC**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description						
1	2	3	4	5	6	7	8	9	10	11
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	STRUCTURE AND ADDITIONAL OBSERVATIONS
VS	FB	VL	ST	MD	VST	D	H	VD	HAND PENETROMETER (kPa)	
		0.10					FILL: Silty CLAY: low plasticity, brown, dry, low strength, small gravel inclusions			
							Silty CLAY: brown, dry, loose, inclusions of organic material and roots			
		PID=0.2 ppm								TP06_0.3
		0.70					Weathered Sandstone: white/red/yellow, low strength			TP06_1.2
		PID=0.1 ppm								
		1								
							END OF TEST PIT AT 1.20 m			

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TP07

SHEET 1 OF 1

Client:	Fulton Trotter Architects
Project:	Samuel Gilbert Public School
Test Pit Location:	Ridgecrop Dr, Castle Hill NSW 2154
Project Number:	PS110639

Date Commenced: 7/11/18
Date Completed: 7/11/18
Recorded By: AC
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL ST MD VST H VD			
		0.10					FILL: Silty SAND: brown, dry, loose, inclusions of organic material and roots				
			PID=0.1 ppm				Silty Clay: low plasticity, dry, low strength				TP07_0.3
		0.50					Weathered Sandstone: White/red/yellow, low strength				
			PID=0.1 ppm								TP07_0.9
		1									
							END OF TEST PIT AT 1.10 m				



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AW**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description											
1	2	3	4	5	6	7	8	9	10	11					
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS				
VS	FB	VL	ST	MD	VST	D		VS	FB	VL	ST	MD	VST	D	
							Silty Sand: loose, brown, inclusions of organic matter								
		0.10	PID=0.1 ppm				Silty Clay: low plasticity, orange/brown, low strength								TP08_0.1
		0.40					Sandstone: Natural, white/orange/red, hard								
			PID=0.1 ppm												TP08_0.6
							END OF TEST PIT AT 0.90 m								
		1													
	</														

This test pit log should be read in conjunction with WSP's accompanying standard notes.

TEST PIT ENVIRONMENTAL LOG

TP09

SHEET 1 OF 1

Client:	Fulton Trotter Architects
Project:	Samuel Gilbert Public School
Test Pit Location:	Ridgescrop Dr, Castle Hill NSW 2154
Project Number:	PS110639

Date Commenced: 7/11/18
Date Completed: 7/11/18
Recorded By: AW
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS	FB	VL	
								S	L	MD	
								F	ST	VD	
								H			

This test pit log should be read in conjunction with WSP's accompanying standard notes.



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AW**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL SL ST F MD D VD			
		PID=0.2 ppm					FILL: Silty Clayey SAND: dark brown, moist, inclusions of organic matter, small blue gravels and small white/dark grey rocks with air bubbles				TP10_0.1
	0.20						Silty Clay: high plasticity, dark orange, moist, low strength				
		PID=0.1 ppm									TP10_0.8
	1.00	1					Sandstone: fine grained, white/yellow/red, dry, hard				
							END OF TEST PIT AT 1.10 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.



TEST PIT ENVIRONMENTAL LOG

Client: **Fulton Trotter Architects**
Project: **Samuel Gilbert Public School**
Test Pit Location: **Ridgecrop Dr, Castle Hill NSW 2154**
Project Number: **PS110639**

Date Commenced: **7/11/18**
Date Completed: **7/11/18**
Recorded By: **AW**
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	HAND PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL SL ST F MD D VD			
		PID=0.1 ppm					FILL: Silt; dark brown, moist, inclusions of plastic, bitumen, roots and organic matter				TP11_0.1
	0.50						Clayey Sand: medium plasticity, stiff, moist, orange, plastic inclusions				
	1.00	PID=0.2 ppm					Weathered Sandstone: Red/yellow/white, moist, hard				TP11_1.0
							END OF TEST PIT AT 1.45 m				
This test pit log should be read in conjunction with WSP's accompanying standard notes.											

TEST PIT ENVIRONMENTAL LOG

TP12

SHEET 1 OF 1

Client:	Fulton Trotter Architects
Project:	Samuel Gilbert Public School
Test Pit Location:	Ridgecrop Dr, Castle Hill NSW 2154
Project Number:	PS110639

Date Commenced: 7/11/18
Date Completed: 7/11/18
Recorded By: AW
Log Checked By:

Excavation Method:

Surface RL:

Co-ords:

Test Pit Information				Field Material Description							
1	2	3	4	5	6	7	8	9	10	11	
WATER	RL(m)	DEPTH(m)	FIELD TEST	SAMPLE	GRAPHIC LOG	USC SYMBOL	SOIL/ROCK MATERIAL FIELD DESCRIPTION	MOISTURE	RELATIVE DENSITY /CONSISTENCY	PENETROMETER (kPa)	STRUCTURE AND ADDITIONAL OBSERVATIONS
								VS FB VL SL ST VST H	MD ID VD		
		0.10	PID=0.4 ppm				FILL: Silty Sand; inclusions of leaves and sticks, dry				
							Silty Sand: low plasticity, orange, dry, low strength				TP12_0.1
		0.90	PID=0.1 ppm				Weathered Sandstone: Red/yellow/white, low strength				TP12_0.9
		1					END OF TEST PIT AT 1.30 m				

This test pit log should be read in conjunction with WSP's accompanying standard notes.