

Environmental Site Assessment Lot 3003 Lord Sheffield Circuit Penrith NSW

St Hilliers Property Pty Ltd

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Executive Summary

Prensa Pty Ltd (Prensa) was engaged by St Hilliers Property Pty Ltd (St Hilliers) to undertake an Environmental Site Assessment (ESA) at Lot 3003 Lord Sheffield Circuit, Penrith, NSW (the site). The site covers an area of 6,303 m² and is described as Lot 3003 in Deposited Plan (DP) 1184498.

This ESA was prepared to supplement a development application (DA) for redevelopment of the site for mixed use including sleeved car parking, commercial (retail and supermarket) with residential above, a retail mall link and ground floor retail. The footprint of the site will be excavated to approximately 4 m below ground level (BGL) for basement car parking.

The objectives of the ESA were to:

- Identify whether significant soil contamination exists that may preclude the proposed future uses of the site following redevelopment, to satisfy SEPP 55 requirements; and
- Classify fill and natural soil in-situ for offsite disposal.

To complete the ESA, Prensa undertook a desktop review of available information and previous environmental reports, field screening, collection and submission of soil samples from fifteen (15) test pits (TP12-TP26) to National Association of Testing Accredited (NATA) laboratories for analysis of contaminants of potential concern (CoPC), and preparation of this ESA report.

At the time of the ESA, the site was rectangular in shape and was generally flat, consistent with the surrounding area. The site was vacant with the exception of a path, which ran across the middle of the site in an east-west direction. The site comprised a combination of exposed surface soil, bark and grass cover.

Based on the information garnered during the desktop study, areas of environmental concern (AEC) were considered to comprise the importation of uncontrolled shallow fill during construction of a former car park and during recent excavation works at the site.

The results of the field screening were consistent with field observations and laboratory results, which indicated a negligible presence of volatile organic compounds.

Fill was encountered at each test pit and varied with depth across the site. The depth of fill ranged from approximately 0.35 m BGL on the eastern portion of the site to a maximum depth of 1.6 m BGL on the western portion of the site. Natural sandy clay soil was encountered underlying the fill in each test pit and graded into sandstone. Visual or olfactory evidence of soil contamination, including suspected asbestos-containing materials, were not noted during excavation or sampling. Bitumen fragments, minor building rubble (i.e. brick fragments) and ash, and a layer of bitumen were, however, observed in the fill in several of the test pits on the eastern side of the site.

CoPC were less than the adopted assessment criteria for the proposed land use, contaminant threshold values for general solid waste and resource recycling at Brandown Recycling Centre. Asbestos was not detected at the limit of reporting and trace fibres of asbestos were not detected.

Based on visual and olfactory observations, information reviewed and analytical results reported, Prensa concludes that:

- Soil contamination has not been identified, which would preclude the proposed redevelopment of the site for mixed use commercial/high-density residential with basement car parking.
- The fill across the site is classified as general solid waste and may be suitable for disposal as resource recovery to an appropriately licensed facility; and
- The natural soil across the site is classified as VENM, which is pre-classified in NSW EPA Waste Classification Guidelines as general solid waste. Furthermore, VENM can be accepted at an appropriately licenced resource recovery yard.

Should soil staining or malodorous soil be encountered during development that has not been assessed as part of this ESA, then Prensa should be contacted as further assessment may be warranted.

Waste soil should be disposed of at a facility appropriately licenced to accept the waste, in accordance with the Protection of the Environment Operations (POEO) Act 1997. It is recommended that this report is sent to the proposed receiving facility to confirm their acceptance of the fill and natural soil prior to off-site disposal.

Statement of Limitations

This document has been prepared in response to specific instructions from St Hilliers to whom the report has been addressed. The work has been undertaken with the usual care and thoroughness of the consulting profession. The work is based on generally accepted standards, practices of the time the work was undertaken. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The report has been prepared for the use by St Hilliers and the use of this report by other parties may lead to misinterpretation of the issues contained in this report. To avoid misuse of this report, Prensa advise that the report should only be relied upon by St Hilliers and those parties expressly referred to in the introduction of the report. The report should not be separated or reproduced in part and Prensa should be retained to assist other professionals who may be affected by the issues addressed in this report to ensure the report is not misused in any way.

Prensa is not a professional quantity surveyor (QS) organisation. Any areas, volumes, tonnages or any other quantities noted in this report are indicative estimates only. The services of a professional QS organisation should be engaged if quantities are to be relied upon.

Sampling Risks

Prensa acknowledges that any scientifically designed sampling program cannot guarantee all sub-surface contamination will be detected. Sampling programs are designed based on known or suspected site conditions and the extent and nature of the sampling and analytical programs will be designed to achieve a level of confidence in the detection of known or suspected subsurface contamination. The sampling and analytical programs adopted will be those that maximises the probability of identifying contaminants. St Hilliers must therefore accept a level of risk associated with the possible failure to detect certain sub-surface contamination where the sampling and analytical program misses such contamination. Prensa will detail the nature and extent of the sampling and analytical program used in the investigation in the investigation report provided.

Environmental site assessments identify actual subsurface conditions only at those points where samples are taken and when they are taken. Soil contamination can be expected to be non-homogeneous across the stratified soils where present on site, and the concentrations of contaminants may vary significantly within areas where contamination has occurred. In addition, the migration of contaminants through groundwater and soils may follow preferential pathways, such as areas of higher permeability, which may not be intersected by sampling events. Subsurface conditions including contaminant concentrations can also change over time. For this reason, the results should be regarded as representative only.

St Hilliers recognises that sampling of subsurface conditions may result in some cross contamination. All care will be taken and the industry standards used to minimise the risk of such cross contamination occurring, however, St Hilliers recognises this risk and waives any claims against Prensa and agrees to defend, indemnify and hold Prensa harmless from any claims or liability for injury or loss which may arise as a result of alleged cross contamination caused by sampling.

Reliance on Information Provided by Others

Prensa notes that where information has been provided by other parties in order for the works to be undertaken, Prensa cannot guarantee the accuracy or completeness of this information. St Hilliers therefore waives any claim against the company and agrees to indemnify Prensa for any loss, claim or liability arising from inaccuracies or omissions in information provided to Prensa by third parties. No indications were found during our investigations that information contained in this report, as provided to Prensa, is false.

Recommendations for Further Study

The industry recognised methods used in undertaking the works may dictate a staged approach to specific investigations. The findings therefore of this report may represent preliminary findings in accordance with these industry recognised methodologies. In accordance with these methodologies, recommendations contained in this report may include a need for further investigation or analytical analysis. The decision to accept these recommendations and incur additional costs in doing so will be at the sole discretion of St Hilliers and Prensa recognises that that St Hilliers will consider their specific needs and the business risks involved. Prensa does not accept any liability for losses incurred as a result of St Hilliers not accepting the recommendations made within this report.

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1 Introduction

Prensa Pty Ltd (Prensa) was engaged by St Hilliers Property Pty Ltd (St Hilliers) to undertake an Environmental Site Assessment (ESA) at Lot 3003 Lord Sheffield Circuit, Penrith, NSW (the site).

The site covers an area of 6,303 m² and is described as Lot 3003 in Deposited Plan (DP) 1184498. The location of the site is shown on Figure 1, provided in the 'Figures' section of this report.

2 Background

This ESA was prepared to supplement a development application (DA) for redevelopment of the site for mixed use including sleeved car parking, commercial (retail and supermarket) with residential above, a retail mall link and ground floor retail. The footprint of the site will be excavated to approximately 4 m below ground level (BGL) for basement car parking. A Masterplan illustrating the proposed layout of the site, prepared by DKO Architects, is provided in Appendix L.

The following planning instruments are considered to apply to the ESA during processing and determining of the DAs:

- State Environmental Planning Policy No. 55 Remediation of Land (SEPP55); and
- Penrith Development Control Plan 2014, C4 Land Management (DCP).

SEPP55 indicates that the land should be suitable, or can and will be made suitable, for the proposed development. The DCP corroborates SEPP55.

3 Objectives

The objectives of the ESA were to:

- Identify whether significant soil contamination exists that may preclude the proposed future uses of the site following redevelopment, to satisfy SEPP55 requirements; and
- Classify fill and natural soil in-situ for offsite disposal.

4 Scope of Works

To complete the objectives, Prensa undertook the following:

- Desktop review of available background information;
- Fieldwork comprising:
 - Preparation of a safe work method statements (SWMS);
 - Dial before you dig (DBYD) search;
 - Site walkover;
 - Service locating using electromagnetic technology by a Telstra accredited service locator;
 - Excavation of 15 test pits (TP1 –TP15) and collection of soil samples from each test pit;
 - Logging of soil conditions encountered at each test pit; and
 - Field screening of soil samples using a photo-ionisation detector (PID).
- Laboratory analysis of a selection of primary soil samples and quality control samples at National Association of Testing Accredited (NATA) accredited laboratories for contaminants of potential concern (CoPC); and
- Preparation of this ESA report.

5 Technical Framework

Works were undertaken in general accordance with the following:

- NSW Work Health and Safety (WHS) Act 2011 (WHS Act 2011);
- NSW WHS Regulation 2011 (WHS Regulation 2011);
- The Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act 1999);
- Contaminated Land Management (CLM) Act, 1997 (CLM Act 1997);
- CLM Amendment Act 2008;
- Protection of the Environment Operations (POEO) Act 1997 (POEO Act 1997);
- POEO (Waste) Regulation 2014 (POEO Regulation 2014);
- National Environment Protection Council (NEPC) Act 1994 (NEPC Act 1994);
- National Environment Protection Council, National Environment Protection (Assessment of Site Contamination) Measure, 1999 (April 2013) (NEPM 2013);
- NSW Environment Protection Authority (EPA) State Environmental Planning Policy 55 – Remediation of Land (SEPP 55), 1998;
- NSW EPA Waste Classification Guidelines: Part 1 – Classifying Waste, 2014 (NSW EPA 2014);
- CRC Care Technical Report No. 10, Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater, 2011 (CRC Care 2011);
- NSW Office of Environment and Heritage (OEH), Guidelines for Consultants Reporting on Contaminated Sites, 2011 (OEH 2011);
- Australian Standard (AS) 4482.1-2005, Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 1: Non-volatile and Semi-volatile Compounds, 2005 (AS4482.2-2005);
- AS 4482.2, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances, 1999 (AS4482.2-1999); and
- AS 1726 Geotechnical Site Investigations, 1993.

6 Data Quality Objectives

Systematic planning and verification was deemed critical for the successful implementation of the ESA to ensure that the data collected is reliable and representative. A process for establishing data quality objectives (DQOs) for an investigation has been defined by the United States Environmental Protection Agency (US EPA). That process has been adopted in AS 4482.1-2005 and referenced in NEPM 2013.

DQOs ensure that:

- The study objectives are set;
- Appropriate types of data are collected (based on proposed land use and CoPC); and
- The tolerance levels are set for potential decision making errors.

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 and data quality indicators adopted are discussed and summarised in Appendix A.

7 Site Information

7.1 Site Location

Site identification details are summarised in Table 1 and the location of the site is shown on Figure 1, provided in the 'Figures' Section of this report.

Table 1: Site Identification Details

Address	Lot 3003, Lord Sheffield Circuit, Penrith, NSW
Site Area	6,303 m ²
Title Identification	Lot 3003 in DP1184498
Current Zoning	'B2' Local Centre under Penrith Local Environmental Plan 2010
Local Government Authority	Penrith City Council
Owner	St Hilliers Property Pty Ltd
Current Land Use	Vacant

7.2 Site Description

The site description is based on visual observations made during a site walkover by a Prensa Environmental Consultant on 19th September 2016. Access to the site was from the adjoining land, which bordered the eastern boundary of the site. This land was accessed via Lord Sheffield Circuit, which was situated immediately to the east. The site was rectangular in shape and generally flat, consistent with the surrounding area. The site was vacant with the exception of a bitumen path ran across the middle of the site in an east-west direction. The site comprised a combination of exposed surface soil, bark and grass cover.

The presence of underground infrastructure such as underground storage tanks, triple interceptor traps or oil separators were not identified during the site walkover.

Photographs taken during the fieldwork are provided in Appendix B and the location of the site is shown on Figure 1 in the 'Figures' section of the report.

7.3 Surrounding Land use

The description of surrounding land use is based on visual observations made during fieldwork by a Prensa Environmental Consultant on 19th September 2016. The area in the immediate vicinity of the site primarily comprised car parking and land undergoing development for multi-storey low and high-density residential and commercial properties as well as Penrith railway station. The site was bound to the:

- **North** by undeveloped land, residential development beyond;
- **East** by a sealed and landscaped walkway, which linked to the pedestrian walkway to Penrith station, Lord Sheffield Circuit, development of multi-storey buildings beyond, undeveloped land and Sports Oval located approximately 150 m and 200 m east, respectively;
- **South** by Penrith railway station, commercial buildings beyond; and
- **West** by roadway, car parking, vacant land and commercial buildings beyond.

8 Environmental Setting

8.1 Topography and Drainage

A review of the online topographical map (<http://maps.six.nsw.gov.au>), accessed on 18th October 2016, indicated the site is located at an elevation of approximately 30 m Australian Height Datum (AHD).

Given the topography and the surface cover of the site, surface water runoff was considered to be limited, with water likely to infiltrate the unsealed surfaces at the site. Surface water run offsite was anticipated discharge into local stormwater drains located along Lord Sheffield Circuit, which in turn are likely to discharge into the Nepean River.

8.2 Surface Waters and Groundwater

The closest natural surface water body to the site is Nepean River, located approximately 1.5 km west of the site. As such,

A review of the NSW Department of Primary Industries (DPI) Water database online (<http://allwaterdata.water.nsw.gov.au/water.stm>) accessed 18th October 2016, indicated that three (3) groundwater bores are located within 500 m of the site as summarised in Table 2.

Table 2: Summary of Borehole Records

Well No	Approx. distance from site (m)	Water Bearing Zones (m BGL)	Standing Water Level (m BGL)	Well use
GW108042	500 north	-	6.4	Monitoring Bore
GW108041	500 north	6.5-7.5	6.7	Monitoring Bore
GW108043	500 north	7.0-9.0	6.8	Monitoring Bore

m BGL: meters below ground level

The three (3) bores identified were noted to be located on a property owned by Lubes Direct Pty Ltd. An online search indicated that Lubes Direct Pty Ltd was founded in 2006 and is petroleum product company associated with the wholesale distribution of petroleum and petroleum products.

Given the distance from the site and the likely groundwater flow to the west, towards the Nepean River, it was considered unlikely that contamination at this property (if any) would have resulted in contamination at the site.

Bore records are provided in Appendix C.

8.3 Regional Geology

A review of the 1:250,000 Geological Series Map of Sydney (Department of Mineral Resources Geological Survey of NSW, Sheet 1/56-05, Edition 3, 1966) indicates the site is located at the intersection of two (2) geologies:

- Quaternary aged alluvium, gravel, sand, silt and clay; and
- Triassic aged Bringelly Shale, Minchinbury Sandstone and Ashfield Shale, comprising shale with some sandstone beds.

8.4 Acid Sulfate Soils

A review of acid sulfate soil (ASS) information contained within the online Australian Soil Resource Information System (ASRIS) database (http://www.asris.csiro.au/index_ie.html), accessed on 18th October 2016, indicated that the site is located in an area of low probability of ASS.

8.5 Areas of Environmental Interest

A search for areas of environmental interest listed in Table 3 were undertaken. Copies of the searches are provided in Appendix C.

Table 3: Areas of Environmental Interest

Item	Description	Comments
Ramsar Wetlands	Registered Ramsar Wetlands of Australia	Nothing registered for the site or within 250 m of the site.
Critical Habitat Register	Areas of declared critical habitat under sections 53-55 of the Threatened Species Conservation Act 1995	Nothing registered for the site or within 250 m of the site.

9 Public Records

9.1 Online Public Records

A search of the online public records listed in Table 4 were undertaken. Copies of the searches are provided in Appendix C.

Table 4: Online Public Records

Public Record	Description	Comments
Contaminated Land Record	Recorded notices under Section 58 of the Contaminated Land Management Act 1997.	Nothing recorded for the site or within 250 m of the site. The register was searched for the LGA of Penrith.
NSW Contaminated Sites Notified To EPA	Notifications under Section 60 of the Contaminated Land Management Act 1997 (CLM Act)	Nothing recorded for the site or within 250 m of the site. The register was searched for the suburb of Penrith.
NSW EPA Public Register	Registered Environment Protection licences, applications, notices, audits or pollution studies and reduction programs under the POEO Act 1997. Former Licensed Activities under the POEO Act 1997, now revoked or surrendered	Nothing registered for the site. The register was searched for the suburb of Penrith.
Unlicensed premises regulated by the EPA	Premises that are no longer required to be licensed under the POEO Act 1997.	Nothing registered for the site or within 250 m of the site. The register was searched for the suburb of Penrith.
NSW EPA List of Former Gasworks	Registered list of former gas works	Nothing recorded for the site or within 250 m of the site.
Waste Management Facilities	Spatial locations of Australia's known landfills, waste transfer stations and a large number of waste reprocessing facilities	Nothing registered for the site or within 250 m of the site.
Mine Areas	An excavation made by the removal of stone, gravel, clay or mineral from the ground for commercial or industrial purposes and tailings dumps from mining operations.	Nothing registered for the site or within 250 m of the site.
Unexploded Ordnance (UXO)	A record of sites where there is potential for residual Unexploded Ordnance (UXO) contamination as a result of military training and live firing undertaken by Australian and Allied forces.	Nothing registered for the site. The register was searched for the suburb of Penrith.

9.2 Section 149 Certificate

A review of the planning certificate for Lot 3003 within DP 1184498 issued under Section 149(2) and 149(5) of the Environment Planning and Assessment Act 1997 indicated that the site was not reported as significantly contaminated land or subject to a management order, voluntary management proposal, ongoing maintenance order or site audit statement.

The s149 certificate made reference to the following environmental reports:

- Geotechnique Pty Ltd, July 2014, Proposed Residential Development: Lord Sheffield Circuit, North Penrith – Contamination Assessment of Soils (Ref. 13217/1-AA);
- Geotechnique Pty Ltd (Geotechnique), Contamination: North Penrith Stages 2B, 2C, 2D, 3A & 3B- Assessment Report (Ref.12609/1), (undated);
- CMPS&F Environmental, NPASD Phase 1- Site History, Preliminary Sampling and Work Plan (Report No: VA0102/RP01), May 1998;
- CMPS&F Environmental, NPASD Phase 2- Contamination Investigation (Report No:VA0102/RP03), dated September 1998; and
- CMPS&F Environmental, Contamination Assessment- Phase 3 Remedial Action Plan for North Penrith Army Stores Depot, September 1998.

Prensa was provided with the Geotechnique report (Ref. 13217/1-AA) for review; a summary of the report is provided in Section 10. However, discussions with Penrith City Council indicated that the reports conducted by CMPS&F Environmental would likely be under copyright and a copy was unable to be provided during the writing of this report.

A copy of the planning certificate is provided in Appendix D.

9.3 Title Search Review

A title search of Lot 3003 was undertaken by Morris Hayes and Edgar, which indicated that the site is currently owned by Landcom who have been the proprietors since 2013.

Notable historical proprietors include Commonwealth of Australia from 1948 to 2011, Penrith Projects Pty Ltd and Gregory (Aust) Pty Ltd in 1962, and various individuals including Sydney Smith (civil servant) from 1939, Joseph Hamilton Strong (dairy farmer) from 1947 and Hugh Read (grazier) from 1948.

A copy of the Title Search including a summary of proprietors and associated plans are provided in Appendix E.

9.4 SafeWork NSW Dangerous Goods Search

SafeWork NSW was contacted to undertake a search of their records relating to the storage of hazardous chemicals. The response received on 20th September 2016 indicated that SafeWork NSW held no records relating to the site.

A copy of the correspondence with SafeWork NSW is provided within Appendix F.

9.5 Aerial Photography Review

A review of historical aerial photographs dating back to 1943 supplied by NSW Land and Property Information is summarised in Table 5. Copies of the historical aerial photographs are provided in Appendix G.

Table 5: Observations From Historical Aerial Photographs

Date	On-Site	Off-Site
1943	The site formed part of a larger property. The north eastern and southern portion of the site comprised vacant, undeveloped land. A portion of an oval access track ran from the north western corner to the central portion of the eastern boundary in the northern portion of the site, which continued in a loop.	The site was surrounded to the north and east by the oval access track. Vacant land was observed to the north east and west of the site. A railway corridor comprising Penrith station was situated immediately south of the site and ran in an east to west direction. Three (3) square structures, possibly Magazines for storing explosives (G-tek, 2010), were observed further north east of the site. Stacked rectangular structures, possibly protective blast walls were located north of the Magazines (G-tek 2010). A potential drain or excavation was observed running between two (2) Magazines east of the site. Shipping containers or pallets, were observed to the east of the site, north of the railway corridor. Access tracks were observed running around these features. Rectangular buildings and structures were observed east and south-east of the site. Several small rectangular structures and road-ways, suspected to be residential development, were observed south of the site, south of the railway corridor.
1956	A row of trees ran along the southern boundary of the site. Trees were also present along the oval access track in the northern portion of the site. Numerous small square structures, potentially containers were observed bordering the south side of the oval access track.	The structures, buildings, and shipping containers formerly situated to the north east and east of the site appeared to have been removed. Additional access roads were observed to the north and east of the site. Additional tracks or drainage trench were also observed on formerly vacant land to the north east and east. A sports oval was observed further north east of the site. Land clearance was observed north west of the site. Three (3) large warehouse type buildings were developed to the north west of the site. Storage of materials was observed to the north of the three (3) buildings. Further development of industrial buildings and surrounding circular structures, likely above ground storage tanks could be observed to the north-west of the warehouses.
1965	The trees along the oval access track in the northern portion of the site had matured. The trees formerly present along the southern boundary had been removed.	An additional warehouse building had been developed north west of the site, west of the three (3) large warehouses formerly identified. Vacant land remained immediately north-east and west of the site. What appeared to be a cricket pitch was observed in the sports oval north east of the site. Clearance of land, in preparation for development was observed to the east of the site, east of the oval.

Table 5: Observations From Historical Aerial Photographs

Date	On-Site	Off-Site
1975	The site remained relatively unchanged from the 1965 aerial photograph.	A square industrial warehouse building had been developed north of the site. An additional two (2) rectangular and one (1) square buildings had been developed -east of the site, north of the railway corridor. Small square buildings were observed surrounding the north-eastern portion of the sports oval, north east of the site. Car parking areas were situated south of the Penrith station adjacent to the railway corridor. Commercial development was also suspected south of the Penrith station.
1986	The site remained relatively unchanged from the 1975 aerial photograph.	The two (2) industrial square buildings formerly situated north-west of the site had been demolished. Development was observed at the Penrith station, south of the site. Land south of the Penrith station appeared to be commercial in nature.
1994	A hardstand carpark likely associated with Penrith station had been developed and covered most of the site. A portion of former oval track remained present on the site.	The three (3) large industrial buildings formerly located north west of the site had been demolished. Further demolition of buildings was observed north east of the site, north and east of the sports oval. A large hardstand area was observed east of the sports oval. A hardstand carpark had been developed and was present to the west, north east and east of the site, Development of the Penrith station was observed south of the site. A foot traffic over bridge had been constructed over the railway station linking the car parking areas to the station.
2002	The site remained relatively unchanged from the 1994 aerial photograph.	The warehouse buildings formerly located to the north and north east of the site had been demolished, however, the hardstand remained. Development of two (2) buildings was observed north-west of the site. Several holes in a gridded pattern in the hardstand were observed north east of the site, east of the sports oval. Material appeared to also be stockpiled on the hardstand. The foot bridge, associated with the Penrith station, located south of the site had increased in size.
2009	The site remained relatively unchanged from the 2002 aerial photograph.	The surrounding area remained relatively unchanged from the 2002 aerial photograph.

Table 5: Observations From Historical Aerial Photographs

Date	On-Site	Off-Site
2016	The site had been cleared of car parking and the oval access track and comprised vacant, undeveloped land, with the exception of a bitumen path that ran across the middle of the site in an east-west direction. The remainder of the surface of the site comprised a combination of exposed surface soil and grass cover.	Significant redevelopment had occurred in the surrounding area including the development of Lord Sheffield Circuit to the east and north of the site and Dunshea Place to the west of the site. Car parking and a multi-story commercial building had been developed to the west. Multi-storey commercial/residential buildings had also been developed north east of the site. Land immediately north of the site was vacant and comprised grass covered. A sealed and landscaped walkway linking to the pedestrian walkway to the Penrith station had been developed immediately east of the site. Development of buildings, potentially residential was observed east of the site, east of Lord Sheffield Circuit. Additional development sites were also observed north west and north east of the site. Vacant land remained present east of the site, south of Lord Sheffield Circuit.

10 Previous Environmental Reports

Prensa was supplied with the following reports and laboratory analytical reports pertaining to the site for review:

- Geotechnique Pty Ltd (Geotechnique), Proposed Residential Development Lord Sheffield Circuit, North Penrith Contamination Assessment of Soils, (Ref: 13217/1-AA, 29th July 2014), and associated SGS Analytical Report (SGS Reference SE129349 R1, Report No 0000087538, 22 July 2014) (SGS 2014); and
- G-tek Australia Pty Ltd (G-tek), Post Activity Report Desktop Review Unexploded Ordnance Former Engineers Stores Depot North Penrith, NSW (Ref:10067ADOD, 26 October 2010) (G-tek, 2010).

A summary of the two (2) reports is provided below.

10.1 Geotechnique 2014

Geotechnique were engaged to determine the contamination status of soils and to assess whether the soils present a risk of harm to human health and/or the environment under the conditions for the proposed development. The assessment was an extension from a report entitled Geotechnique 2013, Virgin Excavation Natural Material Classification Report (Ref: 1212994/5-AA dated 18th November 2013. The report was prepared for the site and neighbouring lots.

A review of the report indicated the following in relation to the site (Lot 3003):

- Fieldwork was conducted on 1 and 2 July 2014;
- Thirteen (13) test pits (T10 to TP22) were excavated in an approximate gridded pattern cross the site. Test pits were not established in the bitumen area situated in the southern portion of the site;
- Two (2) boreholes (A1 to A2) were established within an ash area in the southern portion of the eastern boundary.
- Fill was encountered within each test pit and ranged in thickness from 0.1 m to 1.5 m. Two (2) distinct fill layers were identified including "Type 1" described as silty clay and "Type 2" described as silty sand;

- Natural soil was encountered at each test pit underlying the fill material and was generally described as grey mottled, orange silty clay/clayey silt;
- Traces of bitumen or ash were observed in the fill at TP11 and TP21. Ash was further noted in TP16 and TP18. Scattered asphaltic concrete fragments were reported on the ground surface around TP13 and TP17. Inclusions of ash and charcoal in the fill layer was also noted in A1 and A2 in the ash area; and
- *“with the exception of bitumen, asphaltic concrete fragments, ash and charcoal, observation by the Environmental Scientist indicated no visual evidence of asbestos-cement pieces or other indicators of significant contamination, such as staining, odours, or other foreign matter on the ground surface or in the test pits, boreholes and recovered fill samples that would indicate potential for contamination.”*

The analytical results for the samples analysed from the site reported contaminant concentration less than the adopted criteria and laboratory limits of reporting (LOR).

With regard to remediation at the site, Geotechnique made the following comments:

- *“The presence of bitumen asphaltic concrete fragments, ash and / or charcoal is considered an aesthetic issue.”*
- *“As such, some form of remediation/management of the fill, bitumen, asphaltic concrete fragments, ash and charcoal of concern should be undertaken.”*
- *“The fill, bitumen, asphaltic concrete fragments, ash and charcoal should be excavated and relocated for placement under roads on the site and in areas designated for development other than residential with gardens/accessible soil, such as residential use with minimal access to soil or commercial/industrial at depths in excess of 1.0 m below the finished ground level (FGL).”*

Geotechnique concluded the following with regard to the site, *“based on this assessment it is considered that the site can be made suitable for the proposed residential with gardens/accessible soil and/or minimum access soil use, subject to implementation of the following recommendations prior to site preparation and earthworks.*

1. Following successful remediation of the fill, bitumen, asphaltic concrete fragments, ash and charcoal, of concern, validation sampling would be required.
2. Contamination assessment of soils at and in the vicinity of power poles within the site is required after the removal of the poles in order to ascertain the contamination status of the soils.
3. Contamination assessment of the footprint of the bitumen area, following the removal of asphaltic concrete is required in order to ascertain the contamination status of the underlying soils.

10.2 G-tek 2010

The Department of Defence engaged G-tek to conduct a desktop review and report prior to the disposal of the site (including surrounding lots).

The objectives of the review were to:

- *“Perform a historic review of the Site to determine the potential for remnant unexploded ordnance (UXO) contamination; [and]*
- *Prepare a report on the assessment conducted and the outcomes of that assessment.”*

G-tek indicated that *“the North Penrith Site was initially designated as an Advanced Stores Depot, then, later in the war, was redesignated as a Base Stores Depot. An Advanced Stores Depot will hold natures and quantities of items and material required for immediate task use, while the Base Depot will generally hold larger quantities of, particularly, bulkier items, and will maintain and service them to ensure that they are available for issue to the Advanced Depot or to individual Engineer units requiring them for a particular task.”*

“The plans also indicate planning for four (4) Magazines for the storage of explosive ordnance; these show protective blast walls around the storehouses and are placed away from other storage and further from the railway line; the walls would have been placed to prevent an accidental explosion within one Magazine initiating an explosion within an adjacent Magazine by deflecting the blast.”

G-tek made the following points with regard to UXO:

- *“A review of the defence UXO website indicated no listing for the North Penrith Site;*
- *No evidence has been located to indicate the storage of explosive ordnance;*
- *No evidence has been located to indicate a potential for remnant explosive ordnance;*
- *No evidence has been located to indicate a potential for remnant unexploded ordnance; and*
- *Storage of explosives (gelignite) was an early wartime contingency measure that did not extend past the end of WWII.”*

G-tek concluded *“it is considered that, from an UXO perspective, the Site is suitable for any future use and development.”*

11 Summary of Site History

The historical review indicated that the site had historically formed a portion of a larger property.

Historical titles indicated that the larger property, which comprised the site, was initially owned by a public servant from 1939. The larger property was later acquired by the Commonwealth of Australia in blocks between 1948 and 2011. Other historical proprietors of portions of the larger property included Penrith Projects Pty Ltd and Gregory (Aust) Pty Ltd from 1962 and various individuals including a dairy farmer from 1947 and a grazier from 1948. The nature of their business is unknown, however, based on aerial photographs, it was likely that Penrith Projects Pty Ltd and Gregory (Aust) Pty Ltd were associated with an industrial development that was present to the north and north east between circa 1965 and 1994.

Historical aerial photographs indicated that the larger property, which comprised the site, was associated with the Department of Defence for storage of ammunitions from at least circa 1943. This was consistent with information provided in the G-tek UXO report, which indicated that the Department of Defence utilised the larger property as various store depots and that it was unlikely that unexploded ordnance was present at the property. The site itself was vacant with the expectation of an oval access track present in the northern portion of the site until circa 1986. The north eastern

and southern portion of the site were utilised as a carpark from circa 1994. The site was redeveloped by 2016 to comprise a bitumen path and a combination of exposed surface soil and grass cover.

Review of recent aerial photographs indicated that the site was utilised as a carpark until circa September 2012, with most of the hardstand of the carpark having been removed by circa October 2012. Subsequently the site appeared to be part of a larger development site, with shallow excavation works and stockpiling observed at the site and in the immediate surrounding area until circa July 2015. The ash area at the site identified by Geotechnique was visible between circa June 2014 and November 2015, and had been removed by circa March 2015.

A contamination assessment of soils was undertaken at the site by Geotechnique in 2014; however, as noted by the review of recent aerial photographs, shallow excavation works were subsequently undertaken until July 2015.

12 Preliminary Conceptual Site Model

A preliminary conceptual site model (CSM) was developed based on review of background information and previous environmental reports to define the contaminants of potential concern (CoPC), potential receptors and potential exposure scenarios for assessment.

12.1 Areas of Environmental Concern

Based on the information gathered during the desktop study, areas of environmental concern (AEC) and associated contaminants of potential concern (CoPC) are summarised in Table 6.

Table 6: Areas and Contaminants of Potential Concern

Area of Environmental Concern	Potential Source	Contaminants of Potential Concern
Soils across the site	Importation of uncontrolled fill beneath the car park in the site and during recent excavation works.	TRH, BTEX, PAH, OCP/OPP, PCB, metals and asbestos

NOTES

TRH: Total recoverable hydrocarbons

BTEX : Benzene, toluene, ethylbenzene and xylene

PAH: Polycyclic aromatic hydrocarbons

OCP/OCP: Organochlorine pesticides/ organophosphate pesticides

PCB: Polychlorinated biphenyls

Metals (eg. arsenic, cadmium, chromium, lead, nickel, zinc, mercury and copper)

12.2 Potential Receptors and Exposure Pathways

Based on the proposed redevelopment (mixed use commercial/high-density residential with basement car parking) and areas of environmental concern noted above, potential receptors and exposure pathways were considered to comprise:

- Future employees and residents of the site via:
 - Vapour intrusion and inhalation of potentially volatile contaminants;
- Future construction workers during redevelopment of the site via:
 - Direct contact (dermal contact and ingestion);
 - Vapour inhalation and inhalation of potentially volatile contaminants; and
 - Inhalation of asbestos fibres.

- Future maintenance workers during intrusive maintenance works of the site via:
 - Direct contact (dermal contact and ingestion);
 - Vapour inhalation and inhalation of potentially volatile contaminants; and
 - Inhalation of asbestos fibres.

13 Assessment Criteria

13.1 Soil Assessment Criteria

To assess the significance of contaminant concentrations in soil, reference was primarily made to NEPM 2013, specifically 'Schedule B1 Guideline on Investigation Levels for Soil and Groundwater' (Schedule B1) for assessment criteria, where available. Schedule B1 provides a framework for the use of investigation and screening levels based on human health and ecological risks. In the absence of relative criteria in NEPM 2013, reference was made to other nationally or state endorsed guidelines. Based on the objectives, proposed land use and potential receptors and exposure pathways, health-based assessment criteria for a high-density residential (i.e. HIL-B) land use were deemed appropriate for this ESA.

Soil health investigation levels (HILs), soil health screening levels (HSLs), and petroleum hydrocarbon management limits were adopted from Schedule B1 of NEPM 2013 and CRC CARE 2011.

The HILs, HSLs and petroleum hydrocarbon management limits adopted are outlined in Table T1 in the 'Tables' section of this report and discussed in Appendix H.

13.2 Waste Classification Assessment Criteria

13.2.1 Landfill

Contaminant threshold (CT) values were adopted from NSW EPA Waste Classification Guidelines 2014 to provide an indication of waste classification status of soil for disposal at landfill. The CT values adopted are outlined in Table T2 in 'Tables' section of this report.

13.2.2 Resource Recovery

Maximum acceptable threshold values for resource recovery were adopted from Brandown Resource Recovery Yard NSW EPA Environmental Licence (POEO Licence 12618, dated 16th April 2014).

The licence stipulates that for resource recovery, soil must meet the CT1 thresholds for General Solid Waste in Table 1 of the Waste Classification Guidelines as in force from time to time with the exception of the maximum threshold values for contaminants specified in the 'Other Limits' column.

The threshold values adopted for resource recovery are outlined in Table T2 in the 'Tables' section of this report.

13.2.3 Virgin Excavated Natural Material

VENM is defined in the POEO Act as "natural material (such as clay, gravel, sand, soil or rock fines):

- *that has been excavated or quarried from areas that are not contaminated with manufactured chemicals, or with process residues, as a result of industrial, commercial, mining or agricultural activities; and*
- *that does not contain any sulfidic ores or soils or any other waste."*

The following ambient background concentrations (ABC) of metals (where available) were referenced in Schedule B5b of NEPM 2013:

- Zinc: 3 mg/kg to 60 mg/kg;
- Arsenic: 1 mg/kg to 18 mg/kg;
- Copper: 2 mg/kg to 40 mg/kg;
- Lead: 0.1 mg/kg to 30 mg/kg;
- Nickel: 1 mg/kg to 55 mg/kg; and
- Trivalent chromium: 3 mg/kg to 160 mg/kg.

14 Methodology

Fieldwork was undertaken on 19th and 20th September 2016 by a Prensa Environmental Consultant.

14.1 Sampling Density Rationale

Fifteen (15) test pits (denoted TP12 to TP16) were excavated in an approximate grid pattern across the site. Test pits were established in grass and bark covered, and exposed surface soil. No test pits were established in the hardstand of the path that ran across the middle of the site.

The sampling density was in general accordance with the minimum sampling density described in AS4482.2-2005 for a site of this size.

14.2 Fieldwork Preliminaries

SWMS were prepared to document the foreseeable hazards associated with the works and to outline the measures that were to be implemented to remove or manage the associated health and environmental risks.

A DBYD search was undertaken as standard procedure to check for underground services. A Telstra-accredited service locator was engaged and cleared the test pit locations for underground assets.

14.3 Test Pit Excavation Method

The fifteen (15) test pits were excavated with the aid of a 3.5 tonne excavator. The location of the test pits are shown on Figure 2 in the 'Figures' section of the report.

Test pits were terminated in natural soil and were progressed to a maximum depth of approximately 2.0 m below ground level (BGL). Subsurface conditions were logged in general accordance with AS 1726 – 1993. Copies of the borehole logs can be provided upon request.

14.4 Soil Sampling and Field Screening

Soil samples were collected from each test pit by hand from the excavator bucket using nitrile gloves. Between each sampling location, new nitrile gloves were used to reduce the potential for cross contamination to occur. The soil samples were placed in laboratory-supplied containers and transported to the laboratory in ice-cooled eskies under standard chain of custody procedure.

A PID was used to screen the soil profile for the presence of volatile organic compounds (VOC) and evidence of hydrocarbon contamination.

15 Laboratory Analysis

EnviroLab Services Pty Ltd (EnviroLab) and Eurofins MGT Pty Ltd (Eurofins) were engaged as the primary and secondary or 'check' laboratories for chemical testing, respectively. The laboratories are NATA accredited for the analysis undertaken.

Primary soil samples collected were submitted for analysis for a selection of the following CoPC:

- Soil samples collected from the fill horizon: TRH, BTEX, PAH, OCP, PCB, metals (x8) and asbestos; and
- Soil samples collected from the natural horizon: PAH and metals (x8).

16 Results

16.1 Subsurface Profile

Fill was encountered at each test pit location and ranged from 0.0 m BGL to a maximum depth of approximately 1.6 m BGL. It was noted that the depth of fill varied across the site. In general, fill was greater across the western and central portions of the site and extended to depths of approximately 0.8 to 1.0 m BGL. The fill in the eastern most portions of the site was shallower and generally extended to depths of approximately 0.35 to 0.5 m BGL.

The fill observed was generally described as brown gravelly clay with inclusions of sand noted in some test pit locations. Bitumen fragments were observed in the fill at TP17, TP 19, TP 22, TP23, and TP24, and a thin bitumen layer was encountered at approximately 0.3 m BGL at TP17, TP18 and TP19. Some ash was noted at a similar depth as the bitumen layer in TP17. Minor building rubble including fragments of brick was observed in TP15 and TP17. A concrete block was also identified at depth at approximately 1.4 m BGL in TP13. It is noted that TP12 was terminated at 1.0 m BGL due to underground services (i.e. cables) encountered.

The fill was underlain by natural soil, which was encountered at each test pit location. The natural soil was generally described as stiff red/brown/grey mottled clay and sandy clay, and resembled the weathering profile of sandstone. The sandy clay graded into sandstone and was described as red/brown/grey mottled fine grained sand, which became crumbly with depth.

Groundwater or bedrock was not encountered during test pitting. Visual or olfactory evidence of soil contamination, including suspected asbestos-containing materials, were not noted during sampling.

Photographs taken during the fieldwork are provided in Appendix B.

16.2 Field Screening

The PID readings recorded in the field across the site ranged between 0 to 1.2 ppm.

16.3 Analytical Results

The laboratory results are summarised in Table T1 and T2 in the 'Tables' section of this report and laboratory reports are provided in Appendix I. A review of the analytical results indicated that:

- With the exception of selected PAHs and metals, concentrations of CoPC were less than the laboratory Practical Quantitation Limit (PQL);
- Asbestos was not detected in the soil samples analysed at the limit of reporting (0.1 g/kg) and trace fibres of asbestos were not detected;
- Concentrations of CoPC (including detected concentrations of metals and PAHs) were less than the relevant adopted soil assessment criteria for a high-density residential land use (HIL-B);
- Concentrations of CoPC were less than the CT1 values for General Solid Waste, with the exception of benzo(a)pyrene (BaP). One (1) sample (TP25_0.5) reported a concentration of BaP, which exceeded the CT1. Statistical analysis undertaken using ProUCL software for BaP concentrations reported in the fill soil profile across the Site, reported a 95% upper confident limit (UCL) value less than the CT1 value for BaP. The ProUCL output is provided in the 'Tables' section of this report.
- Concentrations of CoPC were less than threshold values for contaminants specified in the "Other Limits" column of Brandown Resource Recovery Yard; and
- Concentrations of metals in natural soil samples were within the ABC ranges for natural soil referenced from NEPM 2013.

17 Quality Assurance and Quality Control

Prensa implements project specific quality assurance/quality control (QA/QC) procedures to improve transparency, consistency, comparability, completeness, and confidence in the data collected.

The field and laboratory QA/QC procedures adopted and summary of results for this ESA are provided in Appendix J.

18 Discussion of Results

The results of the field screening using the PID were consistent with field observations and laboratory results which indicated a negligible presence of volatile organic compounds.

Fill was encountered at each test pit and varied with depth across the site to approximately 0.35 to 0.5 m BGL on the eastern portion of the site to approximately 0.8 to 1.0 m BGL on the western and central portions of the site. The maximum depth of fill was 1.6 m BGL. Natural sandy clay soil was encountered underlying the fill in each test pit and graded into sandstone.

Groundwater or bedrock was not encountered during test pitting. Visual or olfactory evidence of soil contamination, including suspected asbestos-containing materials, were not noted during excavation or sampling. Bitumen fragments, minor building rubble (i.e. brick fragments) and ash, and a layer of bitumen were observed in the fill in several of the test pits on the eastern side of the site.

This waste is likely to be disposed off-site as part of the proposed development, which was understood to require excavation to depths of 4 m BGL. Should any fill remain onsite, it should be used under sealed surfaces, as the waste precludes the aesthetics beneficial use and, therefore, should not be utilised for garden bed areas. Furthermore, the presence of this waste may limit the fill being disposed of as resource recycling. As such, discussions should be held with an appropriate resource recovery yard prior to disposal. Alternatively, the fill in the vicinity of TP17, TP18 and TP19 could be managed

separately to the remainder of the site, as this area was identified as largely comprising the bitumen fragments and layer, and ash.

With the exception of some metals and PAHs, CoPC were less than the laboratory PQL. Asbestos was not detected at the limit of reporting and trace fibres of asbestos were not detected.

Furthermore concentrations of CoPC were less than the adopted assessment criteria for the proposed land use, contaminant threshold values for general solid waste and resource recovery at Brandown Recycling Centre.

The analytical results of the previous soil contamination assessment by Geotechnique at the site in 2014 were not compared to the adopted assessment criteria during this ESA as the site conditions have changed (excavation works) since that assessment was undertaken, and as such may no longer be representative of the site conditions.

19 Conclusions

Based on visual and olfactory observations, information reviewed and analytical results reported, Prensa concludes that:

- Soil contamination has not been identified which would preclude the proposed redevelopment of the site for mixed use commercial/high-density residential with basement car parking.
- The fill across the site is classified as general solid waste and may be suitable for disposal as resource recovery to an appropriately licensed facility; and
- The natural soil across the site is classified as VENM, which is pre-classified in NSW EPA Waste Classification Guidelines as General Solid Waste. Furthermore, VENM can be accepted at an appropriately licenced resource recovery yard.

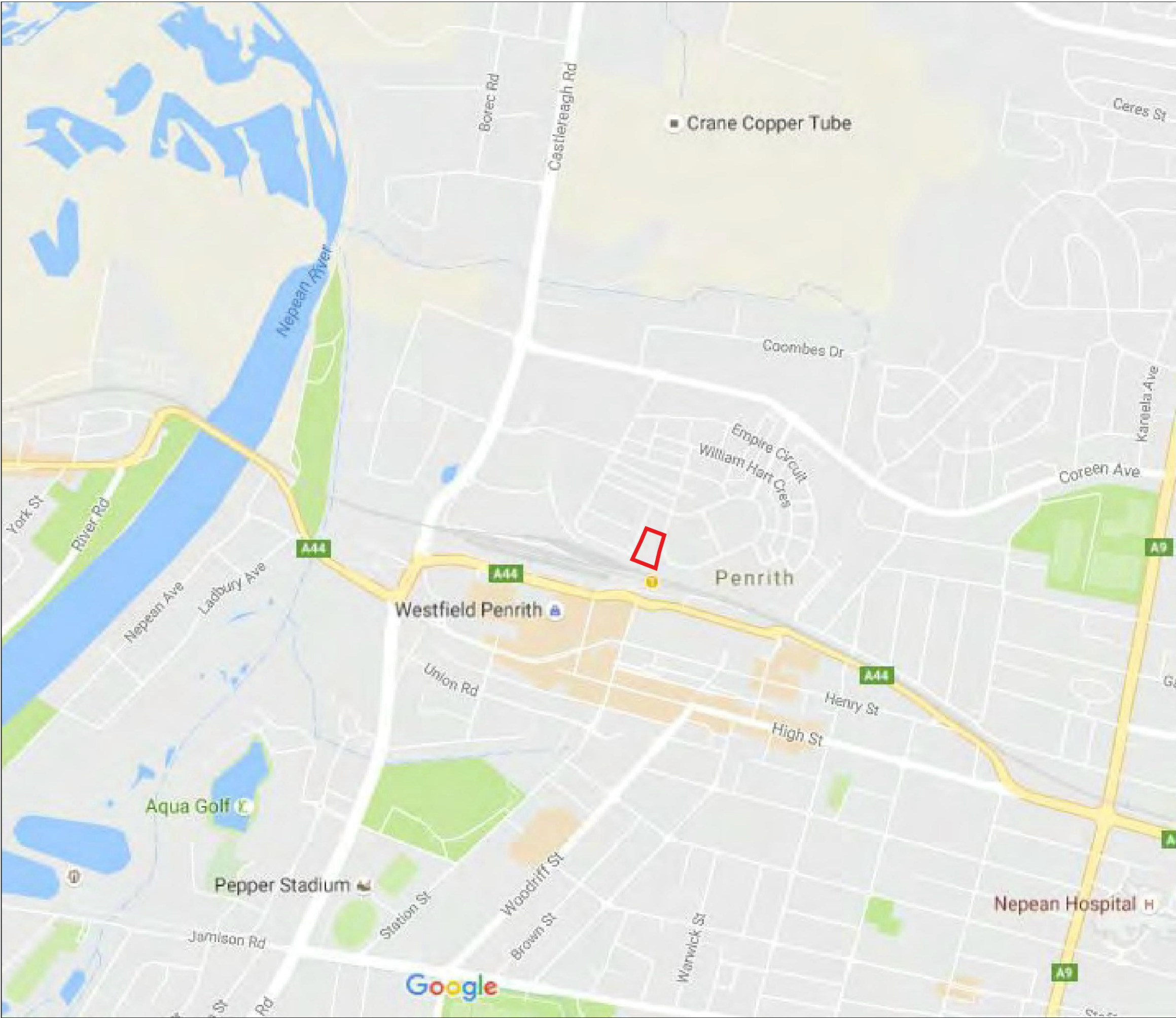
Should stained or malodourous soil be encountered during development that has not been assessed as part of this ESA, then Prensa should be contacted as further assessment may be warranted.

Waste soil should be disposed of at a facility appropriately licenced to accept the waste, in accordance with the POEO Act 1997. It is recommended that this report is sent to the proposed receiving facility to confirm their acceptance of the fill and natural soil prior to off-site disposal.

Abbreviations

Abbreviation	Definition
ACM	Asbestos Containing Material
AHD	Australian Height Datum
AMP	Asbestos Management Plan
AS	Australian Standard
B(a)P	Benzo(a)pyrene
BGL	Below Ground Level
COC	Chain of Custody
CoPC	Contaminant of Potential Concern
CLM	Contaminated Land Management
DBYD	Dial Before You Dig
DEC	Department of Environment and Conservation
DECCW	Department of Environment, Climate Change and Water
EIL	Ecological Investigation Level
EPA	Environment Protection Authority
ESL	Ecological Screening Level
HIL	Health Investigation Level
HSL	Health Screening Level
NATA	National Association of Testing Authorities
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
PAH	Polycyclic Aromatic Hydrocarbons
PID	Photo Ionisation Detector
POEO	Protection of the Environment Operations
PPM	Parts Per Million
PQL	Practical Quantitation Limit
QA/QC	Quality Control/Quality Assurance
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy
SSP	Site Safety Plan
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compounds

Figures



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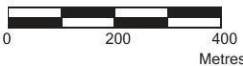
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ST HILLIERS PROPERTY PTY LTD

Project:
ENVIRONMENTAL SITE ASSESSMENT

Address:
LOT 3003,
LORD SHEFFIELD CIRCUIT, PENRITH, NSW

Drawing Title:
SITE LOCATION PLAN

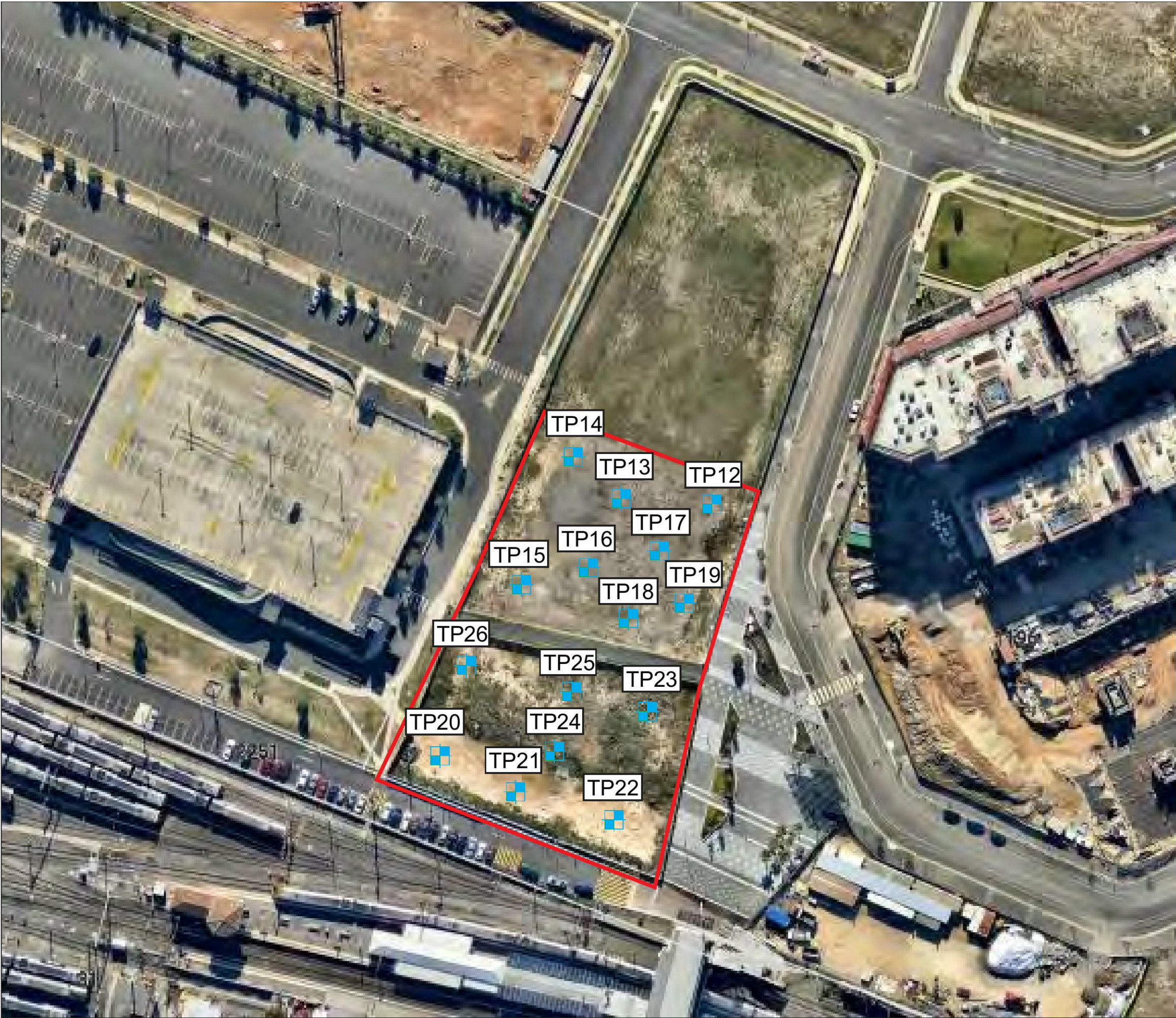
Job No.: 55494 Client No.: S0079



Legend:
 Site Boundary

Note: All locations are approximate
Image Source: Near Maps
Viewed: 23/03/2016

Drawn by: SVS	Date: 20/10/2016	Checked by: AXP	Date: 21/10/2016
File name: 55494_Figures Lot 3003	Figure number: 1	Revision: A	



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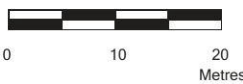
Client:
ST HILLIERS PROPERTY PTY LTD

Project:
ENVIRONMENTAL SITE ASSESSMENT

Address:
LOT 3004, LOT 3005 & LOT 3003,
LORD SHEFFIELD CIRCUIT, PENRITH, NSW

Drawing Title:
SAMPLING LOCATION PLAN

Job No.: 55494 Client No.: S0079



Legend:

- Site Boundary
- Test Pit locations

Note: All locations are approximate

Image Source: Near Maps
Viewed: 23/03/2016

Drawn by: SVS	Date: 20/10/2016	Checked by: AXP	Date: 21/10/2016
File name: 55494_Figures Lot 3003	Figure number: 2	Revision: A	

Tables

nt, NSW

	TRH										BTEXN								
	TRH C ₈ - C ₉	TRH C ₁₀ - C ₁₄	TRH C ₁₅ - C ₁₈	TRH C ₂₀ - C ₃₆	C10 - C36 (Sum of total)	TRH C ₈ - C ₁₀	TRH C ₉ - C ₁₀ less BTEX (F1)	TRH >C ₁₀ -C ₁₆	TRH >C ₁₀ - C ₁₆ less Naphthalene (F2)	TRH >C ₁₀ -C ₃₄	TRH >C ₃₄ -C ₄₀	Benzene	Ethylbenzene	Toluene	m-p-xylene	o-xylene	Xylene Total (SUM)	Naphthalene	
Units	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/l	
PQL	25	50	100	100		25	25	50	50	100	100	0.2	1	0.5	2	1		1	
NEPM 2013 Table 1A(1) HILs Res B Soil																			
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 0-1m							45		110			0.5	55	160			40	3	
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 1-2m							70		240			0.5	NL	220			60	NL	
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 2-4m							110		440			0.5	NL	310			95	NL	
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion >4m							200		NL			0.5	NL	540			170	NL	
NEPM 2013 Table 1B(7) Management Limits in Residential/Parkland/Public Open Space						800		1000		3500	10000								
CRC Care HSL-B Residential (High Density) for Direct Contact						5600		4200		5800	8100	140	5900	21,000			17,000	220	
CRC Care HSL - Intrusive Maintenance Worker 0 to <2 m (Shallow Trench)						180,000		NL				760	NL	NL			NL	880	
Brandsown Resource Recovery Other Limits	150				1600														
Sample ID	Strata	Date Sampled																	
55494_TP12_0.5	FILL	19/09/2016																	
55494_TP12_1.0	NATURAL	19/09/2016																	
55494_TP13_0.2	FILL	20/09/2016																	
55494_TP13_1.8	NATURAL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP14_0.5	FILL	20/09/2016																	
55494_TP14_1.2	NATURAL	20/09/2016																	
55494_TP15_0.2	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP15_1.0	NATURAL	20/09/2016																	
55494_TP16_0.5	FILL	20/09/2016																	
55494_TP16_1.0	NATURAL	20/09/2016																	
55494_TP17_0.4	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP17_0.6	NATURAL	20/09/2016																	
55494_TP18_0.2	FILL	20/09/2016																	
55494_TP18_0.6	NATURAL	20/09/2016																	
55494_TP19_0.3	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP19_0.5	NATURAL	20/09/2016																	
55494_TP20_0.2	FILL	20/09/2016																	
55494_TP20_1.0	NATURAL	20/09/2016																	
55494_TP21_0.5	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP21_1.0	NATURAL	20/09/2016																	
55494_TP22_0.2	FILL	20/09/2016																	
55494_TP22_1.0	NATURAL	20/09/2016																	
55494_TP23_0.5	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP23_1.0	NATURAL	20/09/2016																	
55494_TP24_0.2	FILL	20/09/2016																	
55494_TP25_0.2	FILL	20/09/2016																	
55494_TP25_0.5	FILL	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP25_1.0	NATURAL	20/09/2016																	
55494_TP26_0.2	FILL	20/09/2016																	
55494_TP26_1.1	NATURAL	20/09/2016																	

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Soil Assessment)

			PAH																		
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j,k)fluoranthene	Benzo(g)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ calc (zero)	Benzo(a)pyrene TEQ calc (half)	Benzo(a)pyrene TEQ calc (PQL)	Total Positive PAHs
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.05	0.1	0.1	0.1	0.5	0.5	0.5	
NEPM 2013 Table 1A(1) Hills Res B Soil																			4		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 0-1m			3																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 1-2m			NL																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 2-4m			NL																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion >4m			NL																		
NEPM 2013 Table 1B(7) Management Limits in Residential/Parkland/Public Open Space																					
CRC Care HSL-B Residential (High Density) for Direct Contact			2200																		
CRC Care HSL - Intrusive Maintenance Worker 0 to <2 m (Shallow Trench)			880																		
Brandsown Resource Recovery Other Limits																					80
Sample ID	Strata	Date Sampled																			
55494_TP12_0.5	FILL	19/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP12_1.0	NATURAL	19/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP13_0.2	FILL	20/09/2016	<0.1	0.2	<0.1	<0.1	0.1	<0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.1	<0.1	0.2	<0.5	<0.5	<0.5	1.9
55494_TP13_1.8	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP14_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.06	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.31
55494_TP14_1.2	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP15_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP15_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP16_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	0.2	<0.1	0.2	0.2	0.08	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.93
55494_TP16_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP17_0.4	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	0.2	0.2	0.1	0.2	0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	1.2
55494_TP17_0.6	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.4
55494_TP18_0.2	FILL	20/09/2016	<0.1	0.1	<0.1	<0.1	0.5	0.2	1.2	1.1	0.5	0.6	0.8	0.4	0.2	<0.1	0.2	0.5	0.5	0.5	5.8
55494_TP18_0.6	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.6	0.5	0.2	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	2.1
55494_TP19_0.3	FILL	20/09/2016	<0.1	0.2	<0.1	<0.1	0.2	0.2	0.8	0.8	0.5	0.7	1	0.54	0.3	0.1	0.3	0.9	0.9	0.9	5.8
55494_TP19_0.5	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP20_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP20_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP21_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP21_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP22_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP22_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP23_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP23_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP24_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.11
55494_TP25_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.05
55494_TP25_0.5	FILL	20/09/2016	<0.1	0.4	<0.1	<0.1	1	0.4	2.2	2.2	1	1.2	2	0.86	0.5	0.1	0.6	1.3	1.3	1.3	12
55494_TP25_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP26_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.43
55494_TP26_1.1	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

[illegible]

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Soil Assessment)

			PCB								Metals							
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB (SUM)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1		4	0.4	1	1	1	0.1	1	1
NEPM 2013 Table 1A(1) Hills Res B Soil											500	150	500	30000	1200	120	1200	60000
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 0-1m																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 1-2m																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 2-4m																		
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion >4m																		
NEPM 2013 Table 1B(7) Management Limits in Residential/Parkland/Public Open Space																		
CRC Care HSL-Residential (High Density) for Direct Contact																		
CRC Care HSL - Intrusive Maintenance Worker 0 to <2 m (Shallow Trench)																		
Brandown Resource Recovery Other Limits											40	2				1.5		600
Sample ID	Strata	Date Sampled																
55494_TP12_0.5	FILL	19/09/2016									10	<0.4	18	26	22	<0.1	8	40
55494_TP12_1.0	NATURAL	19/09/2016									<4	<0.4	12	19	8	<0.1	5	17
55494_TP13_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	17	31	26	<0.1	12	59
55494_TP13_1.8	NATURAL	20/09/2016									<4	<0.4	8	9	6	<0.1	4	12
55494_TP14_0.5	FILL	20/09/2016									8	<0.4	19	25	23	<0.1	8	41
55494_TP14_1.2	NATURAL	20/09/2016									<4	<0.4	11	16	9	<0.1	5	17
55494_TP15_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	19	30	30	<0.1	12	49
55494_TP15_1.0	NATURAL	20/09/2016									<4	<0.4	7	8	7	<0.1	4	12
55494_TP16_0.5	FILL	20/09/2016									5	<0.4	12	22	26	<0.1	8	36
55494_TP16_1.0	NATURAL	20/09/2016									<4	<0.4	6	9	5	<0.1	3	11
55494_TP17_0.4	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	0.8	30	25	71	<0.1	10	67
55494_TP17_0.6	NATURAL	20/09/2016									4	<0.4	10	28	24	<0.1	7	26
55494_TP18_0.2	FILL	20/09/2016									6	<0.4	14	32	26	<0.1	9	56
55494_TP18_0.6	NATURAL	20/09/2016									8	<0.4	16	24	29	<0.1	12	40
55494_TP19_0.3	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.4	36	17	21	<0.1	7	21
55494_TP19_0.5	NATURAL	20/09/2016									<4	<0.4	12	15	9	<0.1	7	21
55494_TP20_0.2	FILL	20/09/2016									4	<0.4	16	11	13	<0.1	4	18
55494_TP20_1.0	NATURAL	20/09/2016									<4	<0.4	15	13	8	<0.1	7	17
55494_TP21_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	15	10	13	<0.1	6	12
55494_TP21_1.0	NATURAL	20/09/2016									<4	<0.4	16	15	8	<0.1	8	17
55494_TP22_0.2	FILL	20/09/2016									<4	<0.4	7	5	11	<0.1	2	21
55494_TP22_1.0	NATURAL	20/09/2016									<4	<0.4	15	14	8	<0.1	6	17
55494_TP23_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	15	15	21	<0.1	5	17
55494_TP23_1.0	NATURAL	20/09/2016									<4	<0.4	13	17	8	<0.1	5	17
55494_TP24_0.2	FILL	20/09/2016									5	<0.4	14	20	19	<0.1	8	30
55494_TP25_0.2	FILL	20/09/2016									<4	<0.4	12	18	9	<0.1	5	19
55494_TP25_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.4	10	64	76	0.1	9	84
55494_TP25_1.0	NATURAL	20/09/2016									<4	<0.4	12	11	7	<0.1	4	12
55494_TP26_0.2	FILL	20/09/2016									9	<0.4	14	25	22	<0.1	8	32
55494_TP26_1.1	NATURAL	20/09/2016									<4	<0.4	12	11	7	<0.1	6	16

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Soil Assessment)

			Asbestos	
			Asbestos ID in soil	Trace Analysis
Units				
PQL				
NEPM 2013 Table 1A(1) HILs Res B Soil				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 0-1m				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 1-2m				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion 2-4m				
NEPM 2013 Table 1A(3) Res A/B Soil HSL for Vapour Intrusion >4m				
NEPM 2013 Table 1B(7) Management Limits in Residential/Parkland/Public Open Space				
CRC Care HSL-B Residential (High Density) for Direct Contact				
CRC Care HSL - Intrusive Maintenance Worker 0 to <2 m (Shallow Trench)				
Brandown Resource Recovery Other Limits				
Sample ID	Strata	Date Sampled		
55494_TP12_0.5	FILL	19/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP12_1.0	NATURAL	19/09/2016		
55494_TP13_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP13_1.8	NATURAL	20/09/2016		
55494_TP14_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP14_1.2	NATURAL	20/09/2016		
55494_TP15_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP15_1.0	NATURAL	20/09/2016		
55494_TP16_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP16_1.0	NATURAL	20/09/2016		
55494_TP17_0.4	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP17_0.6	NATURAL	20/09/2016		
55494_TP18_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP18_0.6	NATURAL	20/09/2016		
55494_TP19_0.3	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP19_0.5	NATURAL	20/09/2016		
55494_TP20_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP20_1.0	NATURAL	20/09/2016		
55494_TP21_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP21_1.0	NATURAL	20/09/2016		
55494_TP22_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP22_1.0	NATURAL	20/09/2016		
55494_TP23_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP23_1.0	NATURAL	20/09/2016		
55494_TP24_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP25_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP25_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP25_1.0	NATURAL	20/09/2016		
55494_TP26_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg: Organic fibres detected	No asbestos detected
55494_TP26_1.1	NATURAL	20/09/2016		

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Waste Classification)

			TRH											BTEXN						
			TRH C ₆ - C ₉	TRH C ₁₀ - C ₁₄	TRH C ₁₅ - C ₂₀	TRH C ₂₁ - C ₂₆	C10 - C36 (Sum of total)	TRH C ₆ - C ₁₀	√TPH C ₆ - C ₁₀ less BTEX (F1)	TRH >C ₁₀ -C ₂₆	TRH >C ₁₀ - C ₂₆ less Naphthalene (F2)	TRH >C ₁₀ -C ₂₆	TRH >C ₁₀ -C ₂₆	Benzene	Ethylbenzene	Toluene	m+p-xylene	o-Xylene	Xylene Total (SUM)	Naphthalene
Units			mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/l
PQL			25	50	100	100		25	25	50	50	100	100	0.2	1	0.5	2	1		1
NSW (2014) CT1 General Solid Waste			650				10,000							10	600	288			1000	
NSW (2014) CT2 Restricted Solid Waste			2600				40,000							40	2400	1152			4000	
Sample ID	Strata	Date Sampled																		
55494_TP12_0.5	FILL	19/09/2016																		
55494_TP12_1.0	NATURAL	19/09/2016																		
55494_TP13_0.2	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP13_1.8	NATURAL	20/09/2016																		
55494_TP14_0.5	FILL	20/09/2016																		
55494_TP14_1.2	NATURAL	20/09/2016																		
55494_TP15_0.2	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP15_1.0	NATURAL	20/09/2016																		
55494_TP16_0.5	FILL	20/09/2016																		
55494_TP16_1.0	NATURAL	20/09/2016																		
55494_TP17_0.4	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP17_0.6	NATURAL	20/09/2016																		
55494_TP18_0.2	FILL	20/09/2016																		
55494_TP18_0.6	NATURAL	20/09/2016																		
55494_TP19_0.3	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP19_0.5	NATURAL	20/09/2016																		
55494_TP20_0.2	FILL	20/09/2016																		
55494_TP20_1.0	NATURAL	20/09/2016																		
55494_TP21_0.5	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP21_1.0	NATURAL	20/09/2016																		
55494_TP22_0.2	FILL	20/09/2016																		
55494_TP22_1.0	NATURAL	20/09/2016																		
55494_TP23_0.5	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP23_1.0	NATURAL	20/09/2016																		
55494_TP24_0.2	FILL	20/09/2016																		
55494_TP25_0.2	FILL	20/09/2016																		
55494_TP25_0.5	FILL	20/09/2016	<25	<50	<100	<100	<100	<25	<25	<50	<50	<100	<100	<0.2	<1	<0.5	<2	<1	<2	<1
55494_TP25_1.0	NATURAL	20/09/2016																		
55494_TP26_0.2	FILL	20/09/2016																		
55494_TP26_1.1	NATURAL	20/09/2016																		

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Waste Classification)

			PAH																		
			Naphthalene	Acenaphthylene	Acenaphthene	Fluorene	Phenanthrene	Anthracene	Fluoranthene	Pyrene	Benzo(a)anthracene	Chrysene	Benzo(b,j,k)fluoranthene	Benzo(g)pyrene	Indeno(1,2,3-c,d)pyrene	Dibenzo(a,h)anthracene	Benzo(g,h,i)perylene	Benzo(a)pyrene TEQ calc (zero)	Benzo(a)pyrene TEQ calc (half)	Benzo(a)pyrene TEQ calc (PQL)	Total Positive PAHs
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.05	0.1	0.1	0.1	0.5	0.5	0.5	
NSW (2014) CT1 General Solid Waste														0.8							200
NSW (2014) CT2 Restricted Solid Waste														3.2							800
Sample ID	Strata	Date Sampled																			
55494_TP12_0.5	FILL	19/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP12_1.0	NATURAL	19/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP13_0.2	FILL	20/09/2016	<0.1	0.2	<0.1	<0.1	0.1	<0.1	0.2	0.3	0.2	0.2	0.3	0.2	0.1	<0.1	0.2	<0.5	<0.5	<0.5	1.9
55494_TP13_1.8	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP14_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	<0.2	0.06	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.31
55494_TP14_1.2	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP15_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP15_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP16_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	0.2	0.2	0.08	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.93
55494_TP16_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP17_0.4	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	0.2	0.2	0.1	0.2	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	1.2
55494_TP17_0.6	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.4
55494_TP18_0.2	FILL	20/09/2016	<0.1	0.1	<0.1	<0.1	0.5	0.2	1.2	1.1	0.5	0.6	0.8	0.4	0.2	<0.1	0.2	0.5	0.5	0.5	5.8
55494_TP18_0.6	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	0.3	<0.1	0.6	0.5	0.2	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	2.1
55494_TP19_0.3	FILL	20/09/2016	<0.1	0.2	<0.1	<0.1	0.2	0.2	0.8	0.8	0.5	0.7	1	0.54	0.3	0.1	0.3	0.9	0.9	0.9	5.8
55494_TP19_0.5	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP20_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP20_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP21_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP21_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP22_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP22_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP23_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP23_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP24_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.11
55494_TP25_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.05
55494_TP25_0.5	FILL	20/09/2016	<0.1	0.4	<0.1	<0.1	1	0.4	2.2	2.2	1	1.2	2	0.86	0.5	0.1	0.6	1.3	1.3	1.3	12
55494_TP25_1.0	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE
55494_TP26_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	<0.2	0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	0.43
55494_TP26_1.1	NATURAL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.05	<0.1	<0.1	<0.1	<0.5	<0.5	<0.5	NIL (+)VE

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Waste Classification)

			OCP																				
			HCB	alpha-BHC	gamma-BHC	beta-BHC	Heptachlor	delta-BHC	Aldrin	Heptachlor Epoxide	gamma-Chlordane	alpha-chlordane	Endosulfan I	pp-DDE	Dieldrin	Endrin	pp-DDD	Endosulfan II	pp-DDT	Endrin Aldehyde	Endosulfan Sulphate	Methoxychlor	OCP (SUM)
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			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	0.1	
NSW (2014) CT1 General Solid Waste																							<50
NSW (2014) CT2 Restricted Solid Waste																							<50
Sample ID	Strata	Date Sampled																					
55494_TP12_0.5	FILL	19/09/2016																					
55494_TP12_1.0	NATURAL	19/09/2016																					
55494_TP13_0.2	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP13_1.8	NATURAL	20/09/2016																					
55494_TP14_0.5	FILL	20/09/2016																					
55494_TP14_1.2	NATURAL	20/09/2016																					
55494_TP15_0.2	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP15_1.0	NATURAL	20/09/2016																					
55494_TP16_0.5	FILL	20/09/2016																					
55494_TP16_1.0	NATURAL	20/09/2016																					
55494_TP17_0.4	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP17_0.6	NATURAL	20/09/2016																					
55494_TP18_0.2	FILL	20/09/2016																					
55494_TP18_0.6	NATURAL	20/09/2016																					
55494_TP19_0.3	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP19_0.5	NATURAL	20/09/2016																					
55494_TP20_0.2	FILL	20/09/2016																					
55494_TP20_1.0	NATURAL	20/09/2016																					
55494_TP21_0.5	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP21_1.0	NATURAL	20/09/2016																					
55494_TP22_0.2	FILL	20/09/2016																					
55494_TP22_1.0	NATURAL	20/09/2016																					
55494_TP23_0.5	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP23_1.0	NATURAL	20/09/2016																					
55494_TP24_0.2	FILL	20/09/2016																					
55494_TP25_0.2	FILL	20/09/2016																					
55494_TP25_0.5	FILL	20/09/2016	<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	<0.1	<0.1
55494_TP25_1.0	NATURAL	20/09/2016																					
55494_TP26_0.2	FILL	20/09/2016																					
55494_TP26_1.1	NATURAL	20/09/2016																					

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Waste Classification)

			PCB								Metals							
			Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCB (SUM)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc
Units			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
PQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1		4	0.4	1	1	1	0.1	1	1
NSW (2014) CT1 General Solid Waste											100	20			100	4	40	
NSW (2014) CT2 Restricted Solid Waste											400	80			400	16	160	
Sample ID	Strata	Date Sampled																
55494_TP12_0.5	FILL	19/09/2016									10	<0.4	18	26	22	<0.1	8	40
55494_TP12_1.0	NATURAL	19/09/2016									<4	<0.4	12	19	8	<0.1	5	17
55494_TP13_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	17	31	26	<0.1	12	59
55494_TP13_1.8	NATURAL	20/09/2016									<4	<0.4	8	9	6	<0.1	4	12
55494_TP14_0.5	FILL	20/09/2016									8	<0.4	19	25	23	<0.1	8	41
55494_TP14_1.2	NATURAL	20/09/2016									<4	<0.4	11	16	9	<0.1	5	17
55494_TP15_0.2	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	6	<0.4	19	30	30	<0.1	12	49
55494_TP15_1.0	NATURAL	20/09/2016									<4	<0.4	7	8	7	<0.1	4	12
55494_TP16_0.5	FILL	20/09/2016									5	<0.4	12	22	26	<0.1	8	36
55494_TP16_1.0	NATURAL	20/09/2016									<4	<0.4	6	9	5	<0.1	3	11
55494_TP17_0.4	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	0.8	30	25	71	<0.1	10	67
55494_TP17_0.6	NATURAL	20/09/2016									4	<0.4	10	28	24	<0.1	7	26
55494_TP18_0.2	FILL	20/09/2016									6	<0.4	14	32	26	<0.1	9	56
55494_TP18_0.6	NATURAL	20/09/2016									8	<0.4	16	24	29	<0.1	12	40
55494_TP19_0.3	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	7	<0.4	36	17	21	<0.1	7	21
55494_TP19_0.5	NATURAL	20/09/2016									<4	<0.4	12	15	9	<0.1	7	21
55494_TP20_0.2	FILL	20/09/2016									4	<0.4	16	11	13	<0.1	4	18
55494_TP20_1.0	NATURAL	20/09/2016									<4	<0.4	15	13	8	<0.1	7	17
55494_TP21_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	15	10	13	<0.1	6	12
55494_TP21_1.0	NATURAL	20/09/2016									<4	<0.4	16	15	8	<0.1	8	17
55494_TP22_0.2	FILL	20/09/2016									<4	<0.4	7	5	11	<0.1	2	21
55494_TP22_1.0	NATURAL	20/09/2016									<4	<0.4	15	14	8	<0.1	6	17
55494_TP23_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	5	<0.4	15	15	21	<0.1	5	17
55494_TP23_1.0	NATURAL	20/09/2016									<4	<0.4	13	17	8	<0.1	5	17
55494_TP24_0.2	FILL	20/09/2016									5	<0.4	14	20	19	<0.1	8	30
55494_TP25_0.2	FILL	20/09/2016									<4	<0.4	12	18	9	<0.1	5	19
55494_TP25_0.5	FILL	20/09/2016	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	10	<0.4	10	64	76	0.1	9	84
55494_TP25_1.0	NATURAL	20/09/2016									<4	<0.4	12	11	7	<0.1	4	12
55494_TP26_0.2	FILL	20/09/2016									9	<0.4	14	25	22	<0.1	8	32
55494_TP26_1.1	NATURAL	20/09/2016									<4	<0.4	12	11	7	<0.1	6	16

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Table T1 - Summary of Analytical Results (Waste Classification)

			Asbestos	
			Asbestos ID in soil	Trace Analysis
Units				
PQL				
NSW (2014) CT1 General Solid Waste				
NSW (2014) CT2 Restricted Solid Waste				
Sample ID	Strata	Date Sampled		
55494_TP12_0.5	FILL	19/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP12_1.0	NATURAL	19/09/2016		
55494_TP13_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP13_1.8	NATURAL	20/09/2016		
55494_TP14_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP14_1.2	NATURAL	20/09/2016		
55494_TP15_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP15_1.0	NATURAL	20/09/2016		
55494_TP16_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP16_1.0	NATURAL	20/09/2016		
55494_TP17_0.4	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP17_0.6	NATURAL	20/09/2016		
55494_TP18_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP18_0.6	NATURAL	20/09/2016		
55494_TP19_0.3	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP19_0.5	NATURAL	20/09/2016		
55494_TP20_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP20_1.0	NATURAL	20/09/2016		
55494_TP21_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP21_1.0	NATURAL	20/09/2016		
55494_TP22_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP22_1.0	NATURAL	20/09/2016		
55494_TP23_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP23_1.0	NATURAL	20/09/2016		
55494_TP24_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP25_0.2	FILL	20/09/2016		
55494_TP25_0.5	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP25_1.0	NATURAL	20/09/2016		
55494_TP26_0.2	FILL	20/09/2016	No asbestos detected at reporting limit of 0.1g/kg; Organic fibres detected	No asbestos detected
55494_TP26_1.1	NATURAL	20/09/2016		

Legend	
PQL	Practical Quantitation Limit
NAD	No Asbestos Detected
BOLD & Shaded	Exceeds Adopted Assessment Criteria

Sampling Results 95% Upper Confidence Limit

Site:	Lot 3003 Lord Sheffield Circuit, Penrith, NSW	Date:	19-Oct-16
Project:	Environmental Site Assessment	Job No:	55494
Client:	St Hilliers Property Pty Ltd	Client No:	S0079

Contaminant: Benzo(a)pyrene

Sample	Result (mg/kg)	General Statistics
55494_TP12_0.5	<0.05	Number of Valid Observations: 16
55494_TP13_0.2	0.2	Number of Distinct Observations: 7
55494_TP14_0.5	0.06	
55494_TP15_0.2	<0.05	Raw Statistics
55494_TP16_0.5	0.08	Minimum Detected: 0.05
55494_TP17_0.4	0.05	Maximum Detected: 0.86
55494_TP18_0.2	0.4	Mean of Detected: 0.254
55494_TP19_0.3	0.54	SD of Detected: 0.289
55494_TP20_0.2	<0.05	Minimum Non-Detect: 0.05
55494_TP21_0.5	<0.05	Maximum Non-Detect: 0.05
55494_TP22_0.2	<0.05	
55494_TP23_0.5	<0.05	Log-transformed Statistics
55494_TP24_0.2	<0.05	Minimum Detected: -2.996
55494_TP25_0.2	0.05	Maximum Detected: -0.151
55494_TP25_0.5	0.86	Mean of Detected: -1.958
55494_TP26_0.2	0.05	SD of Detected: 1.149
		Minimum Non-Detect: -2.996
		Maximum Non-Detect: -2.996
		Distribution
		Normal Distribution: No
		Lognormal Distribution: Yes

Recommended UCL Result:	0.276	95% KM (BCA) UCL
NSW (2014) CT1 General Solid Waste	0.8	

Table T3 - Summary of Analytical Results (Quality Control)

Field Duplicates (SOIL)
Filter: SDG in ENVIROLAB 2016-09-21T00:00:00

Field Duplicates (SDG)		SDG		ENVIROLAB 2016-09-21T00:00:00		ENVIROLAB 2016-09-21T00:00:00		RPD		ENVIROLAB 2016-09-21T00:00:00		21-Sep-16		RPD		ENVIROLAB 2016-09-21T00:00:00		ENVIROLAB 2016-09-21T00:00:00		RPD		ENVIROLAB 2016-09-21T00:00:00		21-Sep-16		RPD				
Filter: SDG in (ENVIROLAB 2016-09-21T00:00:00)		Field ID		55494_TP14		55494_QC7				55494_TP14		55494_QC8				55494_TP18		55494_QC9				55494_TP18		55494_QC10						
		Sample Date		20/09/2016		20/09/2016				20/09/2016		20/09/2016				20/09/2016		20/09/2016				20/09/2016		20/09/2016						
		Sample Type		Primary Sample		Blind Sample				Primary Sample		Duplicate Sample				Primary Sample		Blind Sample				Primary Sample		Duplicate Sample						
Method	Chem Name	Units	EQL																											
PAHs in Soil	Benzo(a)pyrene TEQ (LOR)	mg/kg	0.5	<0.5	<0.5	0	<0.5	1.2	82	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	1.2	82	0.5	<0.5	0	1.2	82		
	Total Positive PAHs	mg/kg	0.31	0.31	0.35	12	0.31			5.8	0.29	181	5.8	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.6	18	0.5	<0.5	0	0.6	18		
	Benzo(a)pyrene TEQ calc (Half)	mg/kg	0.5	<0.5	<0.5	0	<0.5	0.6	18	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	
	Benzo(a)pyrene TEQ calc (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	0	0.5	<0.5	
vTRH & BTEX	Benzene	mg/kg	0.2 (Primary); 0.1 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	
	Ethylbenzene	mg/kg	1 (Primary); 0.1 (Interlab)	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	
	Toluene	mg/kg	0.5 (Primary); 0.1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	
	Xylene (m & p)	mg/kg	2 (Primary); 0.2 (Interlab)	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	0	<2.0	<2.0	
	Xylene (o)	mg/kg	1 (Primary); 0.1 (Interlab)	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	0	<1.0	<1.0	
	C6-C10 less BTEX (F1)	mg/kg	25 (Primary); 20 (Interlab)	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	0	<25.0	<25.0	
EXN in Soil NEPM																														
Organochlorine Pesticides	Hexachlorobenzene	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
Moisture	Moisture	%	0.1	18.0	17.0	6	18.0			21.0	21	21.0																		
8 metals in Soil	Lead	mg/kg	1 (Primary); 5 (Interlab)	23.0	24.0	4	23.0	49.0	72	26.0	24.0	8	26.0	56.0	73	26.0	24.0	8	26.0	56.0	73	26.0	24.0	8	26.0	56.0	73	26.0	24.0	
	Arsenic	mg/kg	4 (Primary); 2 (Interlab)	8.0	7.0	13	8.0	6.6	19	6.0	6.0	0	6.0	<2.0	100	8.0	7.0	13	8.0	6.6	19	6.0	6.0	0	6.0	<2.0	100	8.0	7.0	
	Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	0	<0.4	<0.4	
	Chromium (III+VI)	mg/kg	1 (Primary); 5 (Interlab)	19.0	15.0	24	19.0	25.0	27	14.0	16.0	13	14.0	18.0	25	19.0	15.0	24	19.0	25.0	27	14.0	16.0	13	14.0	18.0	25	19.0	15.0	
	Copper	mg/kg	1 (Primary); 5 (Interlab)	25.0	26.0	4	25.0	58.0	80	32.0	28.0	13	32.0	57.0	56	25.0	26.0	4	25.0	58.0	80	32.0	28.0	13	32.0	57.0	56	25.0	26.0	
	Mercury	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.05	0	<0.1	<0.05	
	Nickel	mg/kg	1 (Primary); 5 (Interlab)	8.0	10.0	22	8.0	17.0	72	9.0	12.0	29	9.0	16.0	56	8.0	10.0	22	8.0	17.0	72	9.0	12.0	29	9.0	16.0	56	8.0	10.0	
	Zinc	mg/kg	1 (Primary); 5 (Interlab)	41.0	52.0	24	41.0	120.0	98	56.0	52.0	7	56.0	74.0	28	41.0	52.0	24	41.0	120.0	98	56.0	52.0	7	56.0	74.0	28	41.0	52.0	
	soil																													
	Organochlorine Pesticides	4,4'-DDE	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1
Organochlorine Pesticides	a-BHC	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Aldrin	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	b-BHC	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Chlordane (cis)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Chlordane (trans)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	d-BHC	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	DDD	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	DDT	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Dieldrin	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Endosulfan I	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Endosulfan II	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Endosulfan sulphate	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Endrin	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Endrin aldehyde	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	g-BHC (Lindane)	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Heptachlor	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Heptachlor epoxide	mg/kg	0.1 (Primary); 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
	Methoxychlor	mg/kg	0.1 (Primary); 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	
vTRH & BTEX	vTRH & BTEX																													
	PAHs in Soil												</																	

Table T4 - Summary of Analytical Results (Trip Blank)



SDG		ENVIROLAB 2016-09-21T00:00:00		
Field ID		55494_TB2		
Sampled_Date		20/09/2016		
Sample Type		Trip_B		

Method_Type	Chem_Name	Units	EQL	
TRH Soil C10-C40 NEPM	C10-C16	mg/kg	50	<50
	C16-C34	mg/kg	100	<100
	C34-C40	mg/kg	100	<100
	F2-NAPHTHALENE	mg/kg	50	<50
	C10 - C14	mg/kg	50	<50
	C15 - C28	mg/kg	100	<100
	C29-C36	mg/kg	100	<100
VTRH & BTEXN in Soil NEPM	Benzene	mg/kg	0.2	<0.2
	Ethylbenzene	mg/kg	1	<1
	Naphthalene	mg/kg	1	<1
	Toluene	mg/kg	0.5	<0.5
	C6 - C9	mg/kg	25	<25
	Xylene (m & p)	mg/kg	2	<2
	Xylene (o)	mg/kg	1	<1
	C6-C10 less BTEX (F1)	mg/kg	25	<25
	C6-C10	mg/kg	25	<25

SDG	ENVIROLAB 2016-09-21T00:00:00
Field ID	55494_RB2
Sampled_Date/Time	20/09/2016
Sample Type	Rinsate

Method_Type	ChemName	Units	EQL	
8 HM in water - dissolved	Arsenic (Filtered)	mg/l	0.001	<0.001
	Cadmium (Filtered)	mg/l	0.0001	<0.0001
	Chromium (III+VI) (Filtered)	mg/l	0.001	<0.001
	Copper (Filtered)	mg/l	0.001	<0.001
	Lead (Filtered)	mg/l	0.001	<0.001
	Mercury (Filtered)	mg/l	0.00005	<0.00005
	Nickel (Filtered)	mg/l	0.001	<0.001
	Zinc (Filtered)	mg/l	0.001	<0.001
OCP in water	4,4-DDE	µg/L	0.2	<0.2
	a-BHC	µg/L	0.2	<0.2
	Aldrin	µg/L	0.2	<0.2
	b-BHC	µg/L	0.2	<0.2
	Chlordane (cis)	µg/L	0.2	<0.2
	Chlordane (trans)	µg/L	0.2	<0.2
	d-BHC	µg/L	0.2	<0.2
	DDD	µg/L	0.2	<0.2
	DDT	µg/L	0.2	<0.2
	Dieldrin	µg/L	0.2	<0.2
	Endosulfan I	µg/L	0.2	<0.2
	Endosulfan II	µg/L	0.2	<0.2
	Endosulfan sulphate	µg/L	0.2	<0.2
	Endrin	µg/L	0.2	<0.2
	Endrin aldehyde	µg/L	0.2	<0.2
	g-BHC (Lindane)	µg/L	0.2	<0.2
	Heptachlor	µg/L	0.2	<0.2
	Heptachlor epoxide	µg/L	0.2	<0.2
	Hexachlorobenzene	µg/L	0.2	<0.2
	Methoxychlor	µg/L	0.2	<0.2
PAHs in Water	Acenaphthene	µg/L	1	<1
	Acenaphthylene	µg/L	1	<1
	Anthracene	µg/L	1	<1
	Benz(a)anthracene	µg/L	1	<1
	Benzo(a) pyrene	µg/L	1	<1
	Benzo(g,h,i)perylene	µg/L	1	<1
	Chrysene	µg/L	1	<1
	Dibenz(a,h)anthracene	µg/L	1	<1
	Fluoranthene	µg/L	1	<1
	Fluorene	µg/L	1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1	<1
	Naphthalene	µg/L	1	<1
	Phenanthrene	µg/L	1	<1
	Pyrene	µg/L	1	<1
PCBs in Water	Arochlor 1016	µg/L	2	<2
	Arochlor 1221	µg/L	2	<2
	Arochlor 1232	µg/L	2	<2
	Arochlor 1242	µg/L	2	<2
	Arochlor 1248	µg/L	2	<2
	Arochlor 1254	µg/L	2	<2
	Arochlor 1260	µg/L	2	<2
TRH Water(C10-C40) NEPM	C10-C16	mg/l	0.05	<0.05
	C16-C34	mg/l	0.1	<0.1
	C34-C40	mg/l	0.1	<0.1
	F2-NAPHTHALENE	mg/l	0.05	<0.05
	C10 - C14	µg/L	50	<50
	C15 - C28	µg/L	100	<100
	C29-C36	µg/L	100	<100
vTRH & BTEXN in Water NEPM	Benzene	µg/L	1	<1
	Ethylbenzene	µg/L	1	<1
	Naphthalene	µg/L	1	<1
	Toluene	µg/L	1	<1
	C6 - C9	µg/L	10	<10
	Xylene (m & p)	µg/L	2	<2
	Xylene (o)	µg/L	1	<1
	C6-C10 less BTEX (F1)	mg/l	0.01	<0.01
	C6-C10	mg/l	0.01	<0.01

Appendix A: Data Quality Objectives

Data Quality Objectives

Step 1 - State the Problem

St Hilliers is proposing to develop the site for mixed use including sleeved car parking, commercial (retail and supermarket) with residential above, a retail mall link and ground floor retail. This ESA is required to supplement the DA for redevelopment of the site.

It is unknown whether significant soil contamination is present that could preclude the proposed uses of the site.

Furthermore, the waste classification of the fill and natural soil beneath the surface of the site is currently unknown and will be required to facilitate off-site disposal during development.

Step 2 - Identify the Decisions

The decisions to be made based on the results of the investigation were as follows:

- What are the CoPC associated with potential soil contamination?
- Are CoPC present within soil, and if so, do they present an unacceptable risk to human health for the proposed commercial land uses?
- If soil contamination is present, does the site require remediation works and/or a management plan prior to development application?

Step 3 - Identify Inputs in the Decision

The inputs required to make the above decisions were as follows:

- Site setting and available background information;
- Selection of appropriate Tier 1 soil assessment criteria and waste classification assessment criteria;
- Visual observations; and
- Field and laboratory analytical results.

Step 4 - Define Boundaries of the Study

The geographical limits appropriate for the data collection and decision making in this investigation comprised the boundary of the site as shown on Figure 2 in the 'Figures' section of this report.

Step 5 - Develop a Decision Rule

The purpose of this step was to define the parameter of interest, specify the action level and combine the outputs of the previous DQO steps into an 'if/then' decision rule that defines the conditions that would cause the decision maker to choose alternative actions.

If the levels of contaminants of potential concern in soil were below the adopted soil assessment criteria, the risk to human health could be considered to be low.

If concentrations of contaminants in soil exceed the adopted soil assessment criteria, consideration for statistical analysis of the dataset should be undertaken to support the need or otherwise for further assessment, remediation or site management. These decision rules include the 95% upper confidence limit (UCL) of the mean contaminant concentration being less than the adopted site assessment criteria, the standard deviation being less than 50% and no individual concentration being in excess of 250% of the site assessment criteria (for similar soil types).

Step 6 - Specify Limits on Decision Errors

The acceptable limits on decision errors applied during the ESA and the manner of addressing possible decision errors were developed based on the data quality indicators (DQIs) of:

- Accuracy: a quantitative measure of the closeness of reported data to the true value;
- Comparability: a qualitative parameter expressing the confidence with which one (1) data set can be compared with another;
- Completeness: a measure of the amount of useable data (expressed as %) from a data collection activity;
- Representativeness: the confidence (expressed qualitatively) that data are representative of each media present on the site; and
- Precision: a quantitative measure of the variability (or reproducibility) of data.

Step 7 - Optimise the Design

The purpose of this step was to identify a resource-effective data collection design for generating data that satisfies the DQOs.

This assessment was designed considering the information provided during the request for proposal.

A proposal was prepared for the ESA, which outlined a proposed scope. The methodology within the proposal was reviewed at critical times during the project and amended where necessary based on site conditions, unexpected finds, professional judgement and liaison with St Hilliers. The methodology adopted to satisfy the DQOs is described in detail in Section 14.

To ensure the design satisfied the DQOs, DQIs (for accuracy, comparability, completeness, precision and reproducibility) were established to set acceptance limits on field methodologies and laboratory data collected.

Data Quality Indicators

A summary of the field and laboratory DQIs for the ESA are provided in Table A1.

Table A1: Data Quality Indicators (DQIs)

Field Considerations	Laboratory Considerations	Comments
Accuracy (bias)		
Work instructions (WI) are appropriate and have been complied with.	Analysis of: • Trip blanks; • Rinsate blanks; • Reagent blanks; • Method blanks; • Matrix spikes; • Surrogate spikes; • Reference material; • Laboratory control samples; and • Laboratory-prepared spikes.	Bias introduced: • By chemicals during handling or transport; • From contaminated equipment; • From contaminated reagent; • During laboratory analysis; • During laboratory preparation and analysis (may be high or low); • During laboratory preparation and analysis (may be high or low); • Precision of preparation of analytical method; • Precision of preparation of analytical method; and • During collection/transport (may be high or low).
Comparability		
Same WIs used on each occasion. Experienced sampler. Climatic conditions (temperature, rainfall, wind). Same types of samples collected (filtered, size fractions).	Sample analytical methods used (including clean-up). Laboratory practical quantification limits (PQLs) (justify /quantify if different). Same laboratories (justify /quantify if different). Same units (justify /quantify if different).	Same approach to sampling (WIs, holding times). Quantify influence from climatic or physical conditions. Samples collected, preserved, handled in same manner (filtered, same containers).

Table A1: Data Quality Indicators (DQIs)

Field Considerations	Laboratory Considerations	Comments
Completeness		
Critical locations sampled. WIs appropriate and complied with. Experienced sampler. Documentation correct.	Critical samples analysed in accordance with the tender response. Analytes sampled in accordance with scope of works. Appropriate methods and PQLs. Sample documentation correct. Sample holding times complied with.	The required percentage completeness should be specified in the scope of works. Required data must be obtained from critical samples and CoPC. Incompleteness is influenced by: - Field performance problems (access problems, difficulties on site, damage); - Laboratory performance problems (Matrix interference, invalid holding times); and - Matrix problems.
Representativeness		
Appropriate media sampled according to the scope of works. Media in the scope of works sampled.	Samples analysed according to the tender response.	Samples must be collected to reflect characteristics of each medium. Sample analysis must reflect properties of field samples. Homogeneity of the samples. Appropriate collection, handling, storage and preservation. Detection of laboratory artefacts, e.g. contamination blanks.
Precision		
WIs appropriate and complied with.	Analysis of: - Laboratory and inter-laboratory duplicates; and - Field duplicates.	Measured by the coefficient of variance or standard deviation of the mean or Relative Percentage. Field duplicates measure field and laboratory precision Difference (RPD) calculations. Variation in RPDs can be expected to be higher for organics, low concentrations (<5 x laboratory PQL) or non-homogenous samples.

Acceptable limits adopted for data quality indicators for this ESA are outlined in Table A2.

Table A2: Acceptable Limits of Data Quality Indicators

Item	Acceptable Limit
Analysis of blind (intra-laboratory) duplicates and split (inter-laboratory) duplicates	Rate of 1:20 primary samples for the same analysis of primary samples; Calculation of relative percentage differences between primary and duplicate samples, the results of which to be less than: • 80% (where the average concentration was 1-10 x laboratory PQL); • 50% (where the average concentration was 10-30 x laboratory PQL); and • 30% (where the average concentration was > 30 x laboratory PQL).
Analysis of rinsate blanks	Rate of one (1) sample per day of sampling; and Results less than the laboratory PQL.
Analysis of trip blanks	Rate of one (1) sample per batch; and Results less than the laboratory PQL.
Analysis of laboratory blanks, spikes, surrogates, reference and control samples	Laboratory specific
Laboratories and methods used	National Association of Testing Authorities accredited.
Sample PQLs	Results less than the adopted assessment criteria; justify/quantify if different.

Appendix B: Photographs



Photo 1. Combination of exposed soil, bark and grass cover across the site.



Photo 2. Water pooled on the surface of the site.



Photo 3. Fill stockpiled adjacent test pit..



Photo 4. Natural soil within the bucket of the excavator.



Photo 5. Underground service encountered at approximately 1.0 m BGL in TP12.



Photo 6. Fill and natural soils stockpiled adjacent test pit.



Photo 7. Bitumen excavated at approximately 0.3 m BGL at TP17, TP 18 and TP19.



Photo 8. Layer of bitumen present and minor ash at approximately 0.3 m BGL at TP17.



Photo 10. Test pit showing fill with natural soil observed at depth.



Photo 11. Fill and natural soils stockpiled adjacent test pit.

Appendix C: Online Public Records

Public Record	NSW EPA Contaminated Land Record
Data Source	http://www.epa.nsw.gov.au/prclmapp/searchregister.aspx and http://www.epa.nsw.gov.au/clm/publiclist.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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Contaminated land

- + Management of contaminated land
- + Consultants and site auditor scheme
- + Underground petroleum storage systems
- Guidelines under the CLM Act
- NEPM amendment
- + Further guidance
- Record of notices
 - About the record
 - Search the record
 - Search tips
 - Disclaimer
- List of NSW contaminated sites notified to EPA
- Frequently asked questions
- Forms

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Search results

Your search for: LGA: Penrith City Council

Matched 23 notices relating to 7 sites.

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
BERKSHIRE PARK	(Northern end of Compartment 5) The Northern ROAD	Castlereagh State Forest	6 former
COLYTON	88 Great Western HIGHWAY	Ampol Service Station	1 current
JAMISONTOWN	92 Mulgoa ROAD	7-Eleven Service Station	2 current
LUDDENHAM	Lot 4 The Northern ROAD	Elura Liquid Waste Disposal Site	1 current
MULGOA	Mulgoa ROAD	Penrith Waste Services	2 former
PENRITH	Castlereagh ROAD	Crane Enfield Metals	3 current and 3 former
ST MARYS	Vallance STREET	Drum Recycler	5 former

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18 October 2016

Public Record	NSW Contaminated Sites Notified To EPA
Data Source	http://www.epa.nsw.gov.au/clm/publiclist.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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	PENDLE HILL	Caltex Service Station 602-606 Great Western HIGHWAY	Service Station	Under assessment	penrith	1 of 10	^ v X
	PENNANT HILLS	Shell Coles Express Pennant Hills West 386 Pennant Hills ROAD	Service Station	Contamination currently regulated under CLM Act			
	PENRITH	Caltex Penrith Service Station 153 Coreen AVENUE	Service Station	Under assessment			
	PENRITH	Former Mobil Depot 174 Coreen AVENUE	Other Petroleum	Under assessment			
	PENRITH	Mirvac Industrial Site 2101 Castlereagh ROAD	Other Industry	Regulation under CLM Act not required			
	PENRITH	7-Eleven (former Mobil) Service Station 212-222 Andrews ROAD	Service Station	Under assessment			
	PENRITH	7-Eleven Service Station 30 Henry ROAD	Service Station	Under assessment			
	PENRITH	Caltex Service Station Castlereagh Rd Cnr Lugard STREET	Service Station	Under assessment			
	PENRITH	Crane Enfield Metals Castlereagh ROAD	Metal Industry	Contamination currently regulated under CLM Act			
	PENRITH	BP Express Service Station Corner Coreen Avenue and Castlereagh ROAD	Service Station	Under assessment			
	PENSHURST	7-Eleven Service Station 612 Forest ROAD	Service Station	Under assessment			
	PENSHURST	Caltex Service Station 641 King Georges ROAD	Service Station	Under assessment			
	PERISHER VALLEY	Perisher Centre Loading Dock Kosciuszko ROAD	Other Petroleum	Regulation under CLM Act not required			

Public Record	NSW EPA Public Register
Data Source	http://www.epa.nsw.gov.au/prpoeo/
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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Number	Name	Location	Type	Status	Issued date
6357	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	POEO licence	Issued	7-Jun-00
1007008	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	5-Jul-02
1020003	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	9-Sep-02
1072516	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	20-Aug-07
1085783	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	21-Oct-08
1104746	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	6-Aug-09
1109805	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	26-Feb-10
1512576	ACI OPERATIONS PTY. LTD.	130-172 ANDREW ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	12-Aug-14
247	BORAL RESOURCES (NSW) PTY LTD	PEACHTREE ROAD, PENRITH, NSW 2750	POEO licence	No longer in force	22-Aug-00
12405	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Issued	9-Mar-06

Public Record		NSW EPA Public Register				
Data Source		http://www.epa.nsw.gov.au/prpoeo/				
Date Searched		18 th October 2016				
Data Custodian		NSW Environment Protection Authority				
Copyright		© State of New South Wales through the Environment Protection Authority				
1070974	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	30-Jul-07	
1077652	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	31-Aug-07	
1109988	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	19-Apr-10	
1525967	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	31-Oct-14	
1526072	CAPRAL LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	11-Nov-14	
1098	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Issued	26-Jun-00	
1017498	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	24-Nov-03	
1072470	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	20-Sep-07	
1104995	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	4-Nov-09	
1512789	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	Compliance Audit	Complete	13-Mar-13	
1512775	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	19-Mar-13	

Public Record		NSW EPA Public Register				
Data Source		http://www.epa.nsw.gov.au/prpoeo/				
Date Searched		18 th October 2016				
Data Custodian		NSW Environment Protection Authority				
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1515690	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	26-Jul-13	
1525217	CRANE ENFIELD METALS PTY. LIMITED	2115 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	26-Sep-14	
10945	CUMMINS SOUTH PACIFIC PTY. LTD.	7 Andrews Road, PENRITH, NSW 2750	POEO licence	Surrendered	19-Jun-00	
1035208	CUMMINS SOUTH PACIFIC PTY. LTD.	7 Andrews Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	8-Mar-04	
308	DORF CLARK INDUSTRIES LIMITED	2101 CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Surrendered	17-Jan-00	
1024084	DORF CLARK INDUSTRIES LIMITED	2101 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	6-Jan-03	
1044228	DORF CLARK INDUSTRIES LIMITED	2101 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	8-Feb-05	
11290	ENDEAVOUR ENERGY	96-120 Blaikie Road, PENRITH, NSW 2750	POEO licence	No longer in force	8-Jan-01	
1035197	ENDEAVOUR ENERGY	96-120 Blaikie Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	8-Mar-04	
20381	Glass Recovery Services Pty Ltd	126 Andrews Road, PENRITH, NSW 2740	POEO licence	Pending		
12132	GULF WESTERN PREMIUM QUALITY LUBRICATING OILS (MANUFACTURING) PTY LIMITED	1 COOMBES DRIVE, PENRITH, NSW 2750	POEO licence	Surrendered	1-Oct-04	

Public Record		NSW EPA Public Register			
Data Source		http://www.epa.nsw.gov.au/prpoeo/			
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1097227	GULF WESTERN PREMIUM QUALITY LUBRICATING OILS (MANUFACTURING) PTY LIMITED	1 COOMBES DRIVE, PENRITH, NSW 2750	s.58 Licence Variation	Issued	2-Feb-09
1104874	GULF WESTERN PREMIUM QUALITY LUBRICATING OILS (MANUFACTURING) PTY LIMITED	1 COOMBES DRIVE, PENRITH, NSW 2750	s.58 Licence Variation	Issued	17-Aug-09
6472	JAMES KEITH COSGROVE	8 HOYLE PLACE, PENRITH, NSW 2750	POEO licence	Surrendered	21-Jun-00
1044521	JAMES KEITH COSGROVE	8 HOYLE PLACE, PENRITH, NSW 2750	s.58 Licence Variation	Issued	16-Feb-05
7019	JAMISON PRIVATE HOSPITAL PROPERTY PTY LTD	366 JAMISON ROAD, PENRITH, NSW 2750	POEO licence	Surrendered	20-Mar-01
2869	LD&D MILK PTY LTD	2257 - 2265 CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Issued	5-Jun-00
1012903	LD&D MILK PTY LTD	2257 - 2265 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	18-Feb-02
1525246	LD&D MILK PTY LTD	2257 - 2265 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	2-Oct-14
3741	NAREX AUSTRALIA PTY LTD	LOT D FROGMORE ROAD, PENRITH, NSW 2750	POEO licence	Surrendered	31-Jan-01
1007235	NAREX AUSTRALIA PTY LTD	LOT D FROGMORE ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	10-May-01
1008444	NAREX AUSTRALIA PTY LTD	LOT D FROGMORE ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	20-Aug-01

Public Record		NSW EPA Public Register			
Data Source		http://www.epa.nsw.gov.au/prpoeo/			
Date Searched		18 th October 2016			
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2818	PANASONIC AVC NETWORKS AUSTRALIA PTY LTD	164 STATION STREET, PENRITH, NSW 2750	POEO licence	Surrendered	24-Mar-00
1048338	PANASONIC AVC NETWORKS AUSTRALIA PTY LTD	164 STATION STREET, PENRITH, NSW 2750	s.58 Licence Variation	Issued	31-May-05
10349	SYDNEY OLYMPIC PARK AUTHORITY	CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Surrendered	6-Jan-00
1409	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Issued	25-May-00
1005313	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	22-Oct-01
1017898	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	26-Jun-02
1018895	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	23-Dec-02
1028330	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	8-Jul-03
1032690	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	25-Nov-03
1032982	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	19-Mar-04
1047700	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	30-Jun-05

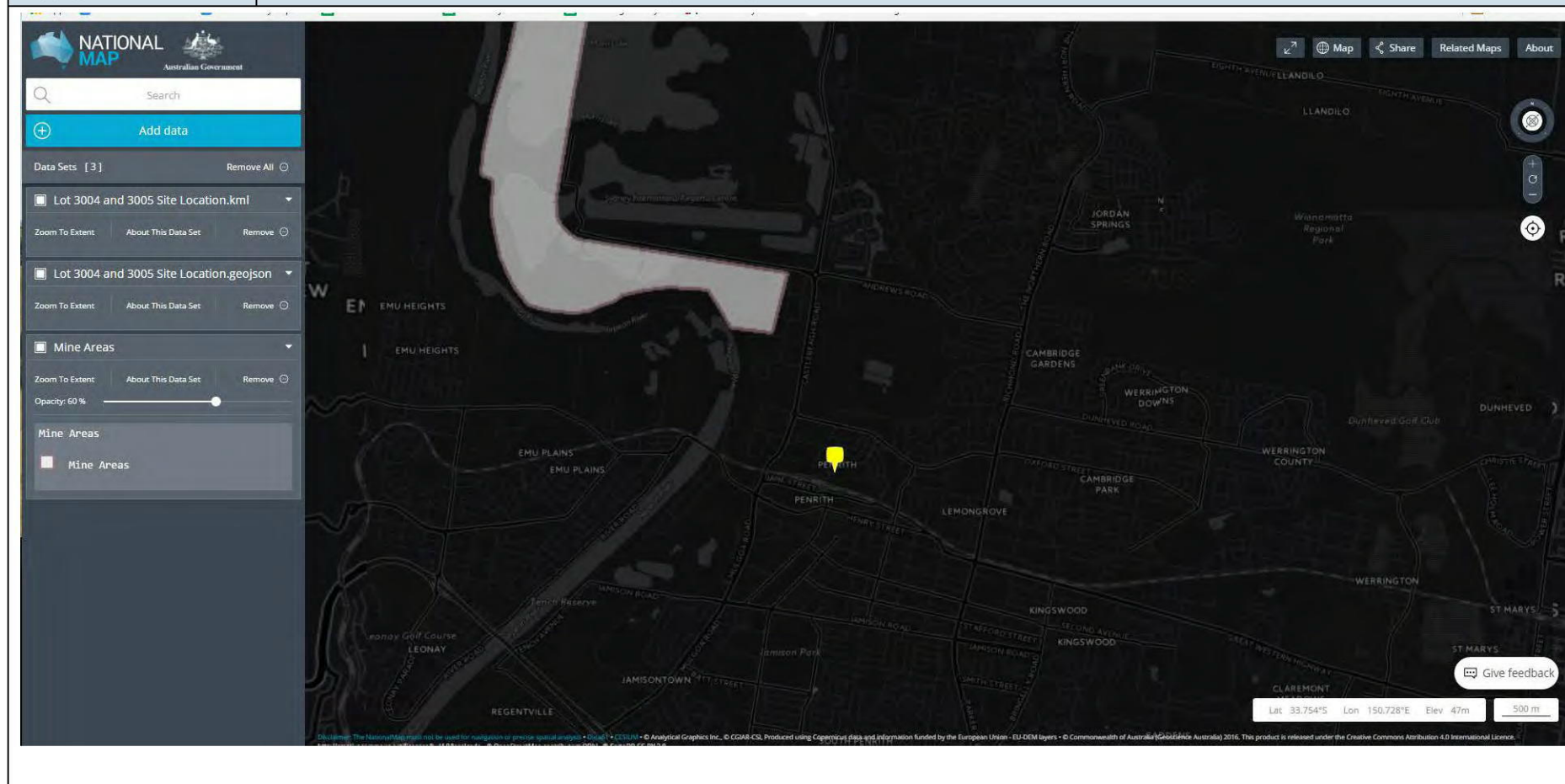
Public Record	NSW EPA Public Register				
Data Source	http://www.epa.nsw.gov.au/prpoeo/				
Date Searched	18 th October 2016				
Data Custodian	NSW Environment Protection Authority				
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1061410	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	29-Jun-06
1074754	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	27-Jun-07
1116048	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	2-Jul-10
1129012	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	27-Jun-11
1504851	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	28-Jun-12
1528922	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	23-Mar-15
1538189	SYDNEY WATER CORPORATION	CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	19-Feb-16
11461	TOTAL CONCRETE SOLUTIONS PTY LIMITED	261 COOMBES DRIVE, PENRITH, NSW 2750	POEO licence	No longer in force	19-Oct-01
1294	VICARY CORPORATION PTY LIMITED	60-62 REGENTVILLE ROAD, PENRITH, NSW 2750	POEO licence	Surrendered	22-Aug-00
12106	VIP STEEL PACKAGING PTY LTD	182-184 Andrews Road, PENRITH, NSW 2750	POEO licence	Surrendered	28-Apr-04
1042219	VIP STEEL PACKAGING PTY LTD	182-184 Andrews Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	10-Nov-04

Public Record		NSW EPA Public Register				
Data Source		http://www.epa.nsw.gov.au/prpoeo/				
Date Searched		18 th October 2016				
Data Custodian		NSW Environment Protection Authority				
Copyright		© State of New South Wales through the Environment Protection Authority				
1065654	VIP STEEL PACKAGING PTY LTD	182-184 Andrews Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	25-Oct-06	
1093267	VIP STEEL PACKAGING PTY LTD	182-184 Andrews Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	10-Nov-08	
1127751	VIP STEEL PACKAGING PTY LTD	182-184 Andrews Road, PENRITH, NSW 2750	s.58 Licence Variation	Issued	3-Jun-11	
5269	VIRBAC (AUSTRALIA) PTY LTD	2152 CASTLEREAGH ROAD, PENRITH, NSW 2750	POEO licence	Issued	10-Aug-00	
1066270	VIRBAC (AUSTRALIA) PTY LTD	2152 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	15-Dec-06	
1072508	VIRBAC (AUSTRALIA) PTY LTD	2152 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	23-Jul-07	
1100623	VIRBAC (AUSTRALIA) PTY LTD	2152 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	7-Oct-09	
1526064	VIRBAC (AUSTRALIA) PTY LTD	2152 CASTLEREAGH ROAD, PENRITH, NSW 2750	s.58 Licence Variation	Issued	11-Nov-14	

Public Record	Unlicensed premises regulated by the EPA
Data Source	http://www.epa.nsw.gov.au/prpoeo/unlicensedpremises.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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Local Govt Area	Licence No.	Accountable Party Name	Prem Street	Prem Suburb	Prem State	Prem Postcode	Fee-Based Activity	Low Scale	>	High Scale
Penrith	247	BORAL RESOURCES (NSW) PTY LTD	PEACHTREE ROAD	PENRITH	NSW	2750	Concrete works	2500 0	>	5000 0
Penrith	11290	INTEGRAL ENERGY AUSTRALIA	96-120 Blaikie Road	PENRITH	NSW	2750	Hazardous, Industrial or Group A Waste Generation or Storage	0		10
Penrith	11461	TOTAL CONCRETE SOLUTIONS PTY LIMITED	261 COOMBES DRIVE	PENRITH	NSW	2750	Concrete works	5000 0	>	

Public Record	Mine Areas
Data Source	http://www.nationalmap.gov.au/
Date Searched	18 th October 2016
Data Custodian	Geoscience Australia
Copyright	Creative Commons Attribution 4.0 International (CC BY 4.0) © Geoscience Australia



Public Record	NSW EPA List of Former Gasworks
Data Source	http://www.epa.nsw.gov.au/clm/gasworkslocation.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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Healthy Environment, Healthy Community, Healthy Business

[Home](#) > [Contaminated land](#) > [Other contamination issues](#) > [Former gasworks sites](#) > Location of former gasworks sites

Location of former gasworks sites

According to a study completed in November 2003 and information that subsequently became available to the Environment Protection Authority (EPA), there are more than 60 former gasworks sites in NSW. The study was commissioned by the Environmental Trust and the Local Government and Shires Associations of NSW to provide an inventory of former sites and assist the EPA and local councils to decide if any action was required to address human health and/or environmental impacts.

The table below lists the location of these sites, excluding sites where the existence of a gasworks was unable to be confirmed. It also does not include the sites of gas booster stations, which were used to raise the pressure of gas supplies. These sites are not included because they were not used to manufacture or process gas and so have limited potential for contamination.

The information available on former gasworks sites and the extent of investigation and remediation that has been carried out varies from site to site and is constantly being updated. For the latest information on sites regulated by the EPA, [search the record of EPA notices for contaminated land](#). For information about sites that are not regulated by the EPA, contact the relevant local council. The EPA has given each council the information it has on sites in their area.

Council
Albury City Council

Gasworks location
Kiewa Street, Albury

For more information
[Search record of EPA](#)

Public Record	NSW EPA List of Former Gasworks
Data Source	http://www.epa.nsw.gov.au/clm/gasworkslocation.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
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Armidale Dumaresq Council	Beardy Street, Armidale	notices Search record of EPA
Auburn Council	Wilson Park, Silverwater	notices Search record of EPA
Bathurst Regional Council	Bathurst Railway Station, Bathurst	notices Contact council
Bathurst Regional Council	Charlotte Street, Bathurst	Contact council
Bathurst Regional Council	Russell St, Bathurst	Search record of EPA notices
Bega Valley Shire Council	Upper Street, Bega	Contact council
Blue Mountains City Council	Megalong Street, Katoomba	Search record of EPA notices
Broken Hill City Council	Mercury Street, Broken Hill	Search record of EPA notices
Cabonne Shire Council	Gasworks Lane, Molong	Contact council
Camden Council	John Street, Camden	Contact council
Canterbury City Council	Kingsgrove Road, Kingsgrove	Contact council
Cessnock City Council	Maitland Road, Cessnock	Contact council
City of Canada Bay Council	Tennyson Road, Mortlake	Search record of EPA notices
City of Canada Bay Council	Wymston Parade, Abbotsford	Search record of EPA notices
City of Lithgow Council	Gasworks Lane, Lithgow	Contact council
Clarence Valley Council	Pound Street, Grafton	Contact council
Cootamundra Shire Council	Hovell Street, Cootamundra	Search record of EPA notices
Council of the City of Sydney	Hickson Road, Millers Point	Search record of EPA notices
Council of the City of Sydney	Macdonaldtown Triangle, Erskineville	Search record of EPA notices
Cowra Shire Council	Brougham Street, Cowra	Contact council
Deniliquin Council	George Street, Deniliquin	Contact council
Dubbo City Council	Gas Lane, Dubbo	Contact council
Forbes Shire Council	Union Street, Forbes	Search record of EPA notices
Glen Innes Severn Shire Council	West Avenue, Glen Innes	Search record of EPA notices
Goulburn Mulwaree Council	Blackshaw Road, Goulburn	Contact council
Hawkesbury City Council	Church Street, Windsor	Contact council
Hay Shire Council	Coke Street, Hay	Contact council
Junee Shire Council	Lord Street, Junee	Contact council

Public Record	NSW EPA List of Former Gasworks		
Data Source	http://www.epa.nsw.gov.au/clm/gasworkslocation.htm		
Date Searched	6 th October 2016		
Data Custodian	NSW Environment Protection Authority		
Copyright	© State of New South Wales through the Environment Protection Authority		
Junee Shire Council	Peel Street, Junee	Contact council	
Lismore City Council	Keen Street, Lismore	Search record of EPA notices	
Liverpool City Council	Mill Road, Liverpool	Contact council	
Liverpool Plains Shire Council	Single Street, Werris Creek	Contact council	
Maitland City Council	Charles Street, Maitland	Search record of EPA notices	
Maitland City Council	Melbourne Street, East Maitland	Search record of EPA notices	
Manly Council	Stuart Street, Manly	Search record of EPA notices	
Mudgee Shire Council	Mortimer Street, Mudgee	Contact council	
Muswellbrook Shire Council	Carl Street, Muswellbrook	Contact council	
Newcastle City Council	Clyde Street, Hamilton North	Search record of EPA notices	
Newcastle City Council	Low Street, Wallsend	Contact council	
Newcastle City Council	Steel Street, Newcastle West	Contact council	
Newcastle City Council	Wharf Road, Newcastle	Contact council	
North Sydney Council	High Street, North Sydney	Search record of EPA notices	
North Sydney Council	King Street, Waverton	Search record of EPA notices	
Orange City Council	Peisley Street, Orange	Contact council	
Parkes Shire Council	Bogan Street, Parkes	Contact council	
Parkes Shire Council	East Street, Parkes	Contact council	
Parramatta City Council	George Street, Parramatta	Contact council	
Richmond Valley Council	North Street, Casino	Contact council	
Shoalhaven City Council	Lamonds Lane, Nowra	Search record of EPA notices	
Singleton Shire Council	Gas Street, Singleton	Search record of EPA notices	
Tamworth Regional Council	Peel Street, Tamworth	Contact council	
The Council of the Municipality of Kiama	Shoalhaven Street, Kiama	Contact council	
Wagga Wagga City Council	Chaston St, Wagga Wagga	Search record of EPA notices	
Wagga Wagga City Council	Tarcutta Street, Wagga Wagga	Search record of EPA notices	
Weddin Shire Council	Gooloogong Road, Grenfell	Search record of EPA notices	
Wellington Council	Gobolion Street, Wellington	Contact council	
Wingecarribee Shire Council	Merrigang Street, Bowral	Search record of EPA	

Public Record	NSW EPA List of Former Gasworks
Data Source	http://www.epa.nsw.gov.au/clm/gasworkslocation.htm
Date Searched	6 th October 2016
Data Custodian	NSW Environment Protection Authority
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Wollongong City Council
Woollahra Municipal Council
Yass Valley Council

Finders Street, Wollongong
White City, Paddington
Dutton Street, Yass

[notices](#)
[Contact council](#)
[Contact council](#)
[Search record of EPA](#)
[notices](#)

Page last updated: 10 May 2013

Connect

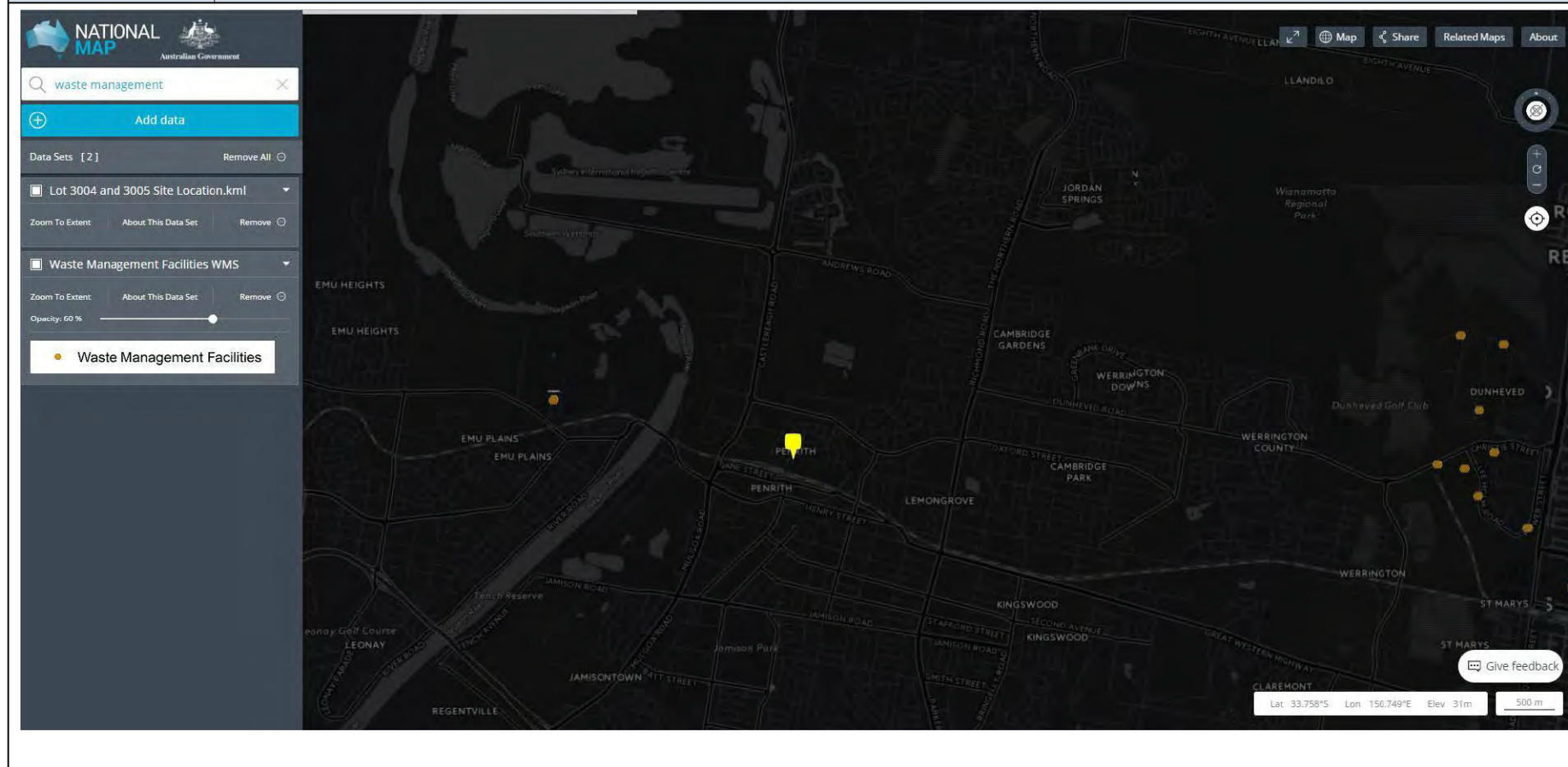
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Public Record	Waste Management Facilities
Data Source	http://www.nationalmap.gov.au/
Date Searched	18 th October 2015
Data Custodian	Geoscience Australia
Copyright	Creative Commons Attribution 4.0 International Licence © Commonwealth of Australia (Geoscience Australia) 2015



Public Record	Unexploded Ordnance (UXO)
Data Source	http://www.defence.gov.au/UXO/WhereIs.asp
Date Searched	18 th October 2015
Data Custodian	Australian Government Department of Defence
Copyright	Creative Commons Attribution 4.0 International Licence © Australian Government Department of Defence



Unexploded Ordnance (UXO)

[Department of Defence](#) > [Unexploded Ordnance \(UXO\)](#) > Where Is UXO

Unexploded Ordnance

- Home
- What is UXO?
- Where is UXO?**
- UXO Panel Streams
- News and Updates
- Contacts

Where is Unexploded Ordnance (UXO)?

UXO can be found in most states within Australia. The following links will take you to an interactive map that will allow you to search the locations of known areas of concern.

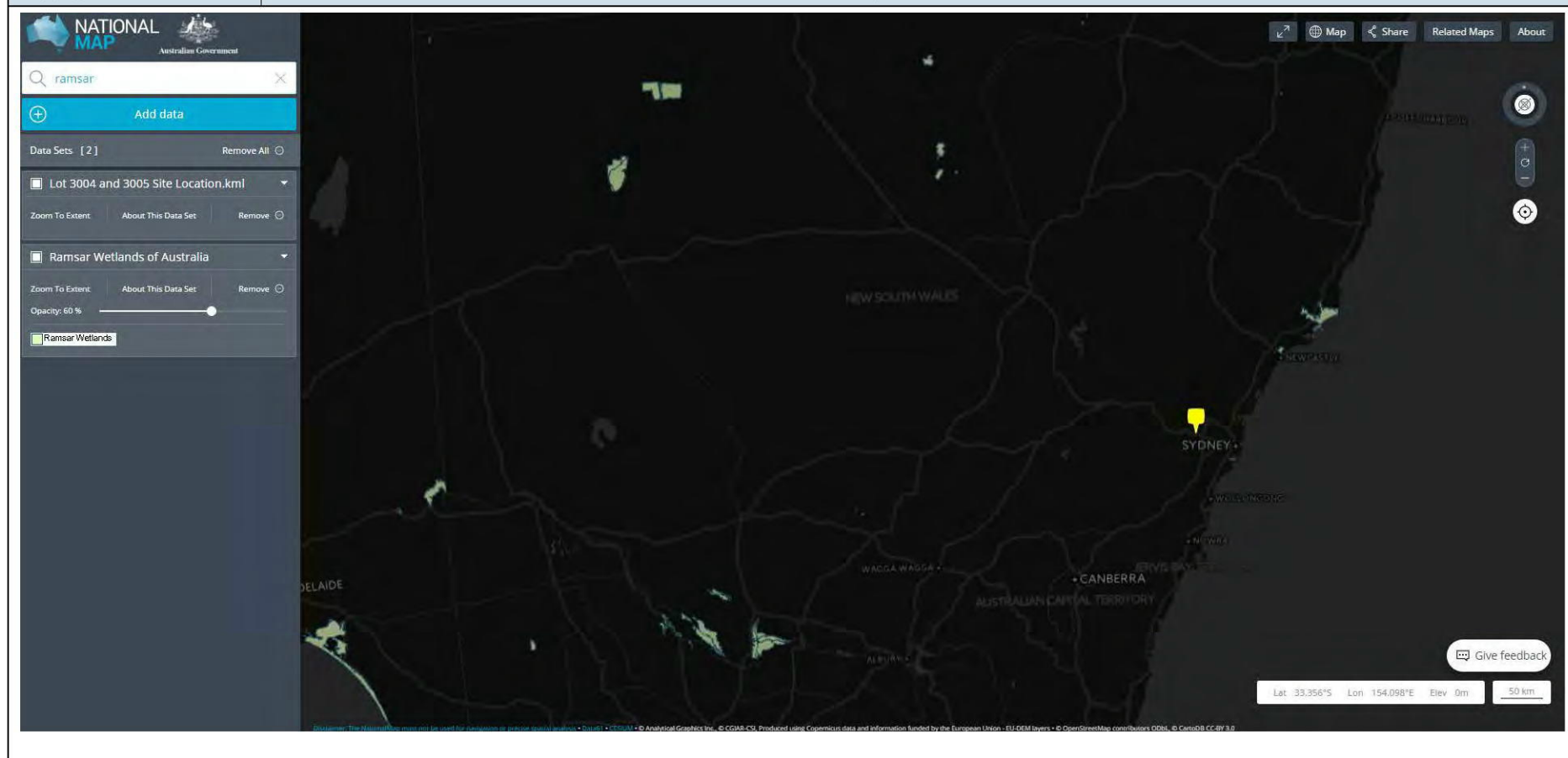
[SELECT STATE](#) > [FIND A MAP](#) > [SELECT STREET](#)

No Results Found

No street found in town/suburb starting with 'Penrith'. Only streets within 500m of a known UXO area are available. Defence is actively engaged in identifying areas where UXO are likely to be present. Members of the public can assist in this process. If you have any information that may be of assistance please contact UXO@defence.gov.au via email.

[Back](#)

Public Record	Ramsar Wetlands
Data Source	http://www.nationalmap.gov.au/
Date Searched	18 th October 2015
Data Custodian	Australian Government Department of the Environment
Copyright	Creative Commons Attribution 3.0 Australia © Australian Government Department of the Environment



Public Record	Critical Habitat Register
Data Source	http://www.environment.nsw.gov.au/criticalhabitat/criticalhabitatprotectionbydoctype.htm
Date Searched	18 th October 2016
Data Custodian	NSW Environment Protection Authority
Copyright	© State of New South Wales through the Environment Protection Authority

Threatened species

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[Search for threatened species](#)

[Conservation projects](#)

[Threatened Species Day](#)

[Legislation](#)

[Critical habitats](#)

[Threat abatement plans](#)

[Recovery plans](#)

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Registers

[Register of s91 licences](#)

Register of critical habitat

[Survey and assessment guidelines](#)

[Scientific Committee](#)

[Get involved](#)

[Home](#) > [Topics](#) > [Animals and plants](#) > [Threatened species](#) > [Registers](#) > [Register of critical habitat](#)

Critical habitat register

This page provides links to declarations of critical habitat and maps of these sites currently in force under sections 53-55 of the Threatened Species Conservation Act 1995.

- There are currently no draft critical habitat recommendations.

Critical habitat declarations in NSW

[Gould's Petrel - critical habitat declaration \(PDF 1.45MB\)](#)

[Little penguin population in Sydney's North Harbour - critical habitat declaration](#)

Find out which areas around Manly have been declared critical habitat, what this means, and how you can help Sydney's little penguins.

[Mitchell's Rainforest Snail in Stotts Island Nature Reserve - critical habitat declaration](#)

[Wollemi Pine - critical habitat declaration \(PDF 2.21MB\)](#)

Page last updated: 05 July 2016

Public Record	Groundwater Works Database
Data Source	http://allwaterdata.water.nsw.gov.au/water.stm
Date Searched	18 th October 2016
Data Custodian	NSW Department of Primary Industries Office of Water
Copyright	© NSW Department of Primary Industries Office of Water



Department of
Primary Industries
Office of Water

Home	About us	Water Management	Water Licensing	Urban Water	Real-time data
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[customise](#)

All Groundwater

[find a site](#)

Enter the site ID

184 Lord Sheffield Circuit, Penri

[find a site](#)

[All Groundwater Map](#)

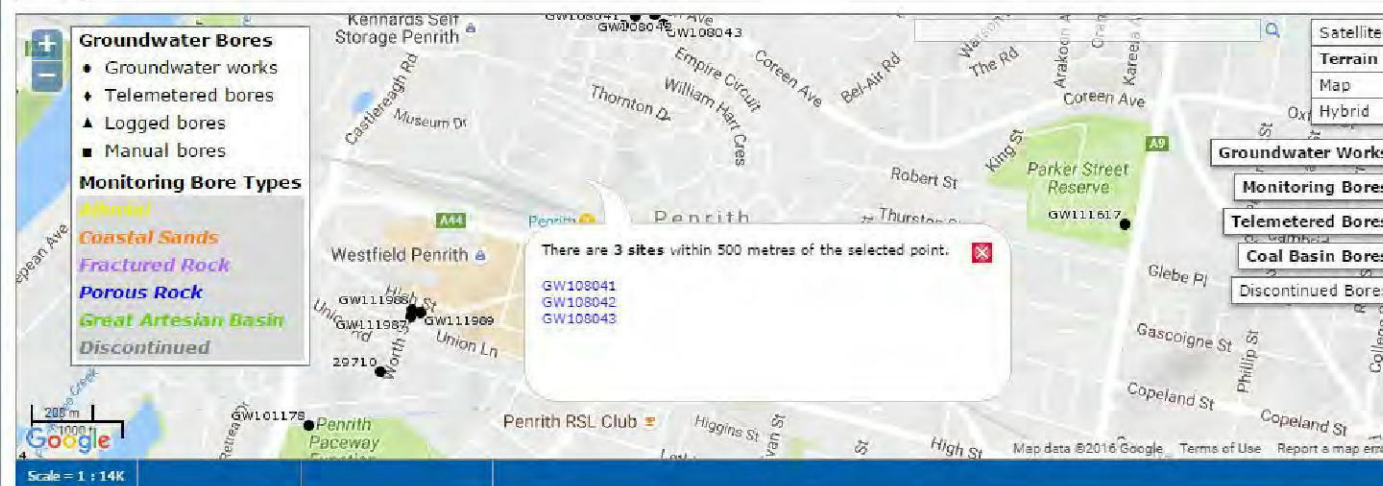
bandwidth ☒ high ☐ low

[glossary and metadata](#)

All Groundwater

All Groundwater Map

All data times are Eastern Standard Time



[bookmark this page](#)

Public Record	Australian Soil Resource Information System (ASRIS)
Data Source	http://www.asris.csiro.au/index_ie.html
Date Searched	18th October 2016
Data Custodian	Commonwealth Scientific and Industrial Research Organisation (CSIRO)
Copyright	© Commonwealth Scientific and Industrial Research Organisation (CSIRO)

ASRIS

Australian Soil Resource Information System

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Maps - Identify



EMU PLAINS

PENRITH

GREAT WESTERN HIGHWAY

0 0.68km

Data delivered by CSIRO Land and Water

National ASS Atlas, 1 feature found
Rec Acid Sulfate Soil Class Acid Sulfate Soil Probability Confidence Scale of source map
 1 :Bn(p4) :Low Probability of Occurrence :4 :1:2M

Base-Map, 1 feature found
Rec Feature Type
 1 :mainland

Legend

- Locations
- Roads (1:250K)
 - Highway
 - Other Roads
- Streams
 - Major
 - Minor
- Builtup Areas
- Inland Water Bodies
- ASS Reference Sites
- National ASS Atlas
 - A1 High Probability/High Confidence
 - A2 High Probability/Moderate Confidence
 - A3 High Probability/Low Confidence
 - A4 High Probability/Very Low Confidence
 - A- High Probability/Confidence

Help

Messages

Site designed and developed by CSIRO Land and Water and ESRI Australia.

Welcome to the Australian Soil

REFRESH MAP

☐ Auto Refresh

Appendix D: Section 149 Planning Certificate

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Property No: 792537
Your Reference: KAB:SMW:1972 Post
Contact No: 9011 6477

Issue Date: 15/09/2016
Certificate No: 16/04600
Receipt Date: 15/09/2016
Receipt No: 2611940

Issued to: Keith Bagley Lawyer
PO Box 352
NEUTRAL BAY JUNCTION NSW 2089

PRECINCT 2010

DESCRIPTION OF LAND

County: CUMBERLAND

Parish: CASTLEREAGH

Location: 184 Lord Sheffield Circuit PENRITH NSW 2750

Land Description: Lot 3003 DP 1184498

- PART 1 PRESCRIBED MATTERS -

In accordance with the provisions of Section 149(2) of the Act the following information is furnished in respect of the abovementioned land:

1 NAMES OF RELEVANT PLANNING INSTRUMENTS AND DCPs

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

Penrith Local Environmental Plan 2010, published 22nd September 2010, as amended, applies to the land.

Sydney Regional Environmental Plan No.9 - Extractive Industry (No.2), gazetted 15 September 1995, as amended, applies to the local government area of Penrith.

Sydney Regional Environmental Plan No. 20 - Hawkesbury-Nepean River (No. 2 - 1997), gazetted 7 November 1997, as amended, applies to the local government area of Penrith (except land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies).

The following State environmental planning policies apply to the land (subject to the exclusions noted below):

State Environmental Planning Policy No.1 - Development Standards. (Note: This policy does not apply to the land to which Penrith Local Environmental Plan 2010 or State Environmental Planning Policy (Western Sydney Employment Area) 2009 apply.)

State Environmental Planning Policy No.19 - Bushland in Urban Areas. (Note: This policy does not apply to certain land referred to in the National Parks and Wildlife Act 1974 and the Forestry Act 1916.)

State Environmental Planning Policy No.21 - Caravan Parks.

State Environmental Planning Policy No.30 - Intensive Agriculture.

PLANNING CERTIFICATE UNDER SECTION 149
Environmental Planning and Assessment Act, 1979

State Environmental Planning Policy No.32 - Urban Consolidation (Redevelopment of Urban Land).
(Note: This policy does not apply to land identified as coastal protection, environmental protection, escarpment, floodway, natural hazard, non-urban, rural, rural residential, water catchment or wetland.)

State Environmental Planning Policy No.33 - Hazardous and Offensive Development.

State Environmental Planning Policy No.50 - Canal Estate Development. (Note: This policy does not apply to the land to which State Environmental Planning Policy (Penrith Lakes Scheme) 1989 applies.

State Environmental Planning Policy No.55 - Remediation of Land.

State Environmental Planning Policy No.62 - Sustainable Aquaculture.

State Environmental Planning Policy No.64 - Advertising and Signage.

State Environmental Planning Policy No.65 - Design Quality of Residential Apartment Development.

State Environmental Planning Policy No.70 - Affordable Housing (Revised Schemes).

State Environmental Planning Policy (Housing for Seniors or People with a Disability) 2004 (Note: This policy applies to land within New South Wales that is land zoned primarily for urban purposes or land that adjoins land zoned primarily for urban purposes, but only as detailed in clause 4 of the policy.)

State Environmental Planning Policy (Building Sustainability Index: BASIX) 2004.

State Environmental Planning Policy (Major Development) 2005.

State Environmental Planning Policy (Mining, Petroleum Production and Extractive Industries) 2007.

State Environmental Planning Policy (Miscellaneous Consent Provisions) 2007.

State Environmental Planning Policy (Infrastructure) 2007.

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

State Environmental Planning Policy (Affordable Rental Housing) 2009.

State Environmental Planning Policy (State and Regional Development) 2011.

1(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:

* Planning Proposal to amend Penrith Local Environmental Plan 2010 - Incentives Clause for Key Sites.

The Planning Proposal seeks to insert an Incentives Clause, permitting a managed departure from current building heights and floor space controls for Key Sites, in return for a Public Benefit. See www.penrithcity.nsw.gov.au <<http://www.penrithcity.nsw.gov.au>> for more information.

Draft State Environmental Planning Policy (Infrastructure) Amendment (Shooting Ranges) 2013 applies to the land.

1(3) The name of each development control plan that applies to the carrying out of development on the land:

Penrith Development Control Plan 2014 applies to the land.

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) that includes the land in any zone (however described):

2(a)-(d) the identity of the zone; the purposes that may be carried out without development consent; the purposes that may not be carried out except with development consent; and the purposes that are prohibited within the zone. Any zone(s) applying to the land is/are listed below and/or in annexures.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

(Note: If no zoning appears in this section see section 1(1) for zoning and land use details (under the Sydney Regional Environmental Plan or State Environmental Planning Policy that zones this property).)

Zone B2 Local Centre (Penrith Local Environmental Plan 2010)

1 Objectives of zone

- To provide a range of retail, business, entertainment and community uses that serve the needs of people who live in, work in and visit the local area.
- To encourage employment opportunities in accessible locations.
- To maximise public transport patronage and encourage walking and cycling.
- To provide retail facilities for the local community commensurate with the centre's role in the local and regional retail hierarchy.
- To ensure that future housing does not detract from the economic and employment functions of a centre.
- To ensure that development reflects the desired future character and dwelling densities of the area.

2 Permitted without consent

Home occupations

3 Permitted with consent

Boarding houses; Building identification signs; Business identification signs; Car parks; Child care centres; Commercial premises; Community facilities; Educational establishments; Entertainment facilities; Flood mitigation works; Function centres; Home businesses; Home industries; Information and education facilities; Medical centres; Passenger transport facilities; Places of public worship; Public administration buildings; Recreation areas; Recreation facilities (indoor); Registered clubs; Respite day care centres; Restricted premises; Roads; Service stations; Shop top housing; Tourist and visitor accommodation;

4 Prohibited

Any development not specified in item 2 or 3

Use of certain land in The Crescent, Penrith

Despite anything to the contrary detailed above, or any other provision of Penrith Local Environmental Plan 2010 (PLEP 2010), under the provisions of Clause 2.5 and Schedule 1 of PLEP 2010 development for the purposes of exhibition villages, high technology industries, multi dwelling housing, residential flat buildings and seniors housing are permitted with development consent on the part of the subject land identified as "22" on the PLEP 2010 Additional Permitted Uses Map.

Additional information relating to Penrith Local Environmental Plan 2010

Note 1: Under the terms of Clause 2.4 of Penrith Local Environmental Plan 2010 development may be carried out on unzoned land only with development consent.

Note 2: Under the terms of Clause 2.6 of Penrith Local Environmental Plan 2010 land may be subdivided but only with development consent, except for the exclusions detailed in the clause.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Note 3: Under the terms of Clause 2.7 of Penrith Local Environmental Plan 2010 the demolition of a building or work may be carried out only with development consent.

Note 4: A temporary use may be permitted with development consent subject to the requirements of Clause 2.8 of Penrith Local Environmental Plan 2010.

Note 5: Under the terms of Clause 4.1A of Penrith Local Environmental Plan 2010, despite any other provision of this plan, development consent must not be granted for dual occupancy on an internal lot in Zone R2 Low Density Residential.

Note 6: Under the terms of Clause 5.1 of Penrith Local Environmental Plan 2010 development on land acquired by an authority of the State under the owner-initiated acquisition provisions may, before it is used for the purpose for which it is reserved, be carried out, with development consent, for any purpose.

Note 7: Under the terms of Clause 5.3 of Penrith Local Environmental Plan 2010 development consent may be granted to development of certain land for any purpose that may be carried out in an adjoining zone.

Note 8: Under the terms of Clause 5.9 of Penrith Local Environmental Plan 2010 trees or other vegetation subject to relevant sections of Penrith Development Control Plan 2014 must not be ringbarked, cut down, topped, lopped, removed, injured or wilfully destroyed without the authority conferred by a development consent or a Council permit.

Note 9: Under the terms of Clause 5.9AA of Penrith Local Environmental Plan 2010 (PLEP 2010) any tree or other vegetation that is not of a species or kind prescribed for the purposes of Clause 5.9 of PLEP 2010 by Penrith Development Control Plan 2014 may be ringbarked, cut down, topped, lopped, removed, injured or destroyed without development consent.

Note 10: Clause 5.10 of Penrith Local Environmental Plan 2010 details when development consent is required/not required in relation to heritage conservation.

Note 11: Under the terms of Clause 5.11 of Penrith Local Environmental Plan 2010 bush fire hazard reduction work authorised by the *Rural Fires Act 1997* may be carried out on any land without development consent.

Note 12: Under the terms of Clause 7.1 of Penrith Local Environmental Plan 2010 (PLEP 2010) development consent is required for earthworks unless the work is exempt development under PLEP 2010 or another applicable environmental planning instrument, or the work is ancillary to other development for which development consent has been given.

Note 13: Sex services premises and restricted premises may only be permitted subject to the requirements of Clause 7.23 of Penrith Local Environmental Plan 2010.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

2(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:

(Information is provided in this section only if 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.)

2(f) whether the land includes or comprises critical habitat:

(Information is provided in this section only if the land includes or comprises critical habitat.)

2(g) whether the land is in a conservation area (however described):

(Information is provided in this section only if the land is in a conservation area (however described).)

2(h) whether an item of environmental heritage (however described) is situated on the land:

(Information is provided in this section only if an item of environmental heritage (however described) is situated on the land.)

2A ZONING AND LAND USE UNDER STATE ENVIRONMENTAL PLANNING POLICY (SYDNEY REGION GROWTH CENTRES) 2006

(Information is provided in this section only if the land is within any zone under State Environmental Planning Policy (Sydney Region Growth Centres) 2006.)

3 COMPLYING DEVELOPMENT

GENERAL HOUSING CODE

(The General Housing Code only applies if the land is within Zones R1, R2, R3, R4 or RU5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the General Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

RURAL HOUSING CODE

(The Rural Housing Code only applies if the land is within Zones RU1, RU2, RU3, RU4, RU6 or R5 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Rural Housing Code **may** be carried out on the land if the land is within one of the abovementioned zones.

HOUSING ALTERATIONS CODE

Complying development under the Housing Alterations Code **may** be carried out on the land.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

GENERAL DEVELOPMENT CODE

Complying development under the General Development Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL ALTERATIONS CODE

Complying development under the Commercial and Industrial Alterations Code **may** be carried out on the land.

SUBDIVISIONS CODE

Complying development under the Subdivisions Code **may** be carried out on the land.

DEMOLITION CODE

Complying development under the Demolition Code **may** be carried out on the land.

COMMERCIAL AND INDUSTRIAL (NEW BUILDINGS AND ADDITIONS) CODE

(The Commercial and Industrial (New Buildings and Additions) Code only applies if the land is within Zones B1, B2, B3, B4, B5, B6, B7, B8, IN1, IN2, IN3, IN4 or SP3 under Penrith Local Environmental Plan 2010 or an equivalent zone in a non standard template planning instrument.)

Complying development under the Commercial and Industrial (New Buildings and Alterations) Code **may** be carried out on the land if the land is within one of the abovementioned zones.

FIRE SAFETY CODE

Complying development under the Fire Safety Code **may** be carried out on the land.

(NOTE: (1) Council has relied on Planning and Infrastructure Circulars and Fact Sheets in the preparation of this information. Applicants should seek their own legal advice in relation to this matter with particular reference to State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

(2) Penrith Local Environmental Plan 2010 (if it applies to the land) contains additional complying development not specified in State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.)

4 COASTAL PROTECTION

The land is not affected by the operation of sections 38 or 39 of the Coastal Protection Act 1979, to the extent that council has been so notified by the Department of Public Works.

5 MINE SUBSIDENCE

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

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

6 ROAD WIDENING AND ROAD REALIGNMENT

The land is not affected by any road widening or road realignment under:

- (a) Division 2 of Part 3 of the Roads Act 1993, or
- (b) an environmental planning instrument, or
- (c) a resolution of council.

7 COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

(a) Council Policies

The land is affected by the Asbestos Policy adopted by Council.

The land is not affected by any other policy adopted 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 and the item Noted below).

Note: Council has adopted by resolution a policy on contaminated land which may restrict the development of the land. This policy, Chapter C4 of Penrith Development Control Plan 2014, is implemented when zoning or land use changes are proposed on lands which have previously been used for certain purposes. Consideration of council's adopted policy and the application of provisions under relevant State legislation is warranted.

(b) Other Public Authority Policies

The Bush Fire Co-ordinating Committee has adopted a Bush Fire Risk Management Plan that covers the local government area of Penrith City Council, and includes public, private and Commonwealth lands.

The land is not affected by a policy 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, tidal inundation, subsidence, acid sulphate soils or any other risk (other than flooding).

7A FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

(1) This land has not been identified as being below the adopted flood planning level (ie. the 1% Annual Exceedance Probability flood level plus 0.5 metre) and as such flood related development controls generally do not apply for dwelling houses, dual occupancies, multi dwelling housing or residential flat buildings (not including development for the purposes of group homes or seniors housing) if such uses are permissible on the land. Council reserves the right, however, to apply flood related development controls depending on the merits of any particular application. Should future studies change this situation this position may be reviewed.

(2) This land has not been identified as being below the adopted flood planning level (ie. the 1% Annual Exceedance Probability flood level plus 0.5 metre) and as such flood related development controls generally do not apply for any other purpose not referred to in (1) above. Council reserves the right, however, to apply flood related development controls depending on the merits of any particular application. Should future studies change this situation this position may be reviewed.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

8 LAND RESERVED FOR ACQUISITION

No 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.

9 CONTRIBUTIONS PLANS

The Cultural Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith.

The Penrith City Local Open Space Development Contributions Plan 2007 applies anywhere residential development is permitted within the City of Penrith, excluding industrial areas and the release areas identified in Appendix B of the Plan (Penrith Lakes, Cranebrook, Sydney Regional Environmental Plan No. 30 - St Marys, Waterside, Thornton, the WELL Precinct, Glenmore Park and Erskine Park). See

[<http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning_Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP\(1\).pdf>](http://www.penrithcity.nsw.gov.au/uploadedFiles/Content/Website/Our_Services/Planning_and_Development/Planning_Zoning_Information/Local_Planning_Documents/LocalOpenSpaceDCP(1).pdf)

The Penrith City District Open Space Facilities Development Contributions Plan applies anywhere residential development is permitted within the City of Penrith, with the exclusion of industrial lands and the Penrith Lakes development site.

9A BIODIVERSITY CERTIFIED LAND

(Information is provided in this section only if the land is biodiversity certified land (within the meaning of Part 7AA of the *Threatened Species Conservation Act 1995*).

10 BIOBANKING AGREEMENTS

(Information is provided in this section only if Council has been notified by the Director-General of the Department of Environment, Climate Change and Water that the land is land to which a biobanking agreement under Part 7A of the *Threatened Species Conservation Act 1995* relates.)

11 BUSH FIRE PRONE LAND

The land is not identified as bush fire prone land according to Council records.

12 PROPERTY VEGETATION PLANS

(Information is provided in this section only if Council has been notified that the land is land to which a property vegetation plan under the Native Vegetation Act 2003 applies.)

13 ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

(Information is provided in this section only if Council has been notified that an order has been made under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.)

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

14 DIRECTIONS UNDER PART 3A

(Information is provided in this section only if 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.)

15 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS AFFECTING SENIORS HOUSING

(Information is provided in this section only if:

- (a) there is a current site compatibility certificate (seniors housing), of which the 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; and/or
- (b) 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 have been imposed as a condition of consent to a development application granted after 11 October 2007 in respect of the land.)

16 SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

(Information is provided in this section only if there is a valid site compatibility certificate (infrastructure), of which council is aware, in respect of proposed development on the land.)

17 SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

(Information is provided in this section only if:

- (a) there is a current site compatibility certificate (affordable rental housing), of which the council is aware, in respect of proposed development on the land; and/or
- (b) any terms of a kind referred to in clause 17(1) or 37(1) of State Environmental Planning Policy (Affordable Rental Housing) 2009 have been imposed as a condition of consent to a development application in respect of the land.)

18 PAPER SUBDIVISION INFORMATION

(Information is provided in this section only if a development plan adopted by a relevant authority applies to the land or is proposed to be subject to a consent ballot, or a subdivision order applies to the land.)

19 SITE VERIFICATION CERTIFICATES

(Information is provided in this section only if there is a current site verification certificate, of which council is aware, in respect of the land.)

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

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) (Information is provided in this section only if, as at the date of this certificate, the land (or part of the land) is significantly contaminated land within the meaning of the Contaminated Land Management Act 1997.)

(b) (Information is provided in this section only if, as at the date of this certificate, the land is subject to a management order within the meaning of the Contaminated Land Management Act 1997.)

(c) (Information is provided in this section only if, as at the date of this certificate, the land is the subject of an approved voluntary management proposal within the meaning of the Contaminated Land Management Act 1997.)

(d) (Information is provided in this section only if, at the date of this certificate, the land subject to an ongoing maintenance order within the meaning of the Contaminated Land Management Act 1997.)

(e) (Information is provided in this section only if the land is the subject of a site audit statement within the meaning of the Contaminated Land Management Act 1997 - a copy of which has been provided to Council.)

Note: Section 149(5) information for this property may contain additional information regarding contamination issues.

Note: The Environmental Planning and Assessment Amendment Act 1997 commenced operation on the 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 (Amendment) Regulation 1998, Environmental Planning and Assessment (Further Amendment) Regulation 1998 and Environmental Planning and Assessment (Savings and Transitional) Regulation 1998 and Environmental Planning and Assessment Regulation 2000.

Information is provided only to the extent that Council has been notified by relevant government departments.

149(5) Certificate

This Certificate is directed to the following relevant matters affecting the land

When information pursuant to section 149(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 149(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.

Note:

- Council's 149(5) information does not include development consent or easement information. Details of development consents may be obtained by making enquiries with Council's Development Services Department pursuant to section 12 of the Local Government Act 1993 or (for development applications lodged after January 2007) by viewing the Online Services area at www.penrithcity.nsw.gov.au. Details of any easements may be obtained from a Title Search at Land and Property Information New South Wales.
- This certificate does not contain information relating to Complying Development Certificates.
- This certificate may not provide full details of development rights over the land.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

*** Threatened Species Conservation Act 1995**

When considering any development application Council must have regard to the Threatened Species Conservation Act 1995. Please note that this legislation may have application to any land throughout the city. Interested persons should make their own enquiries in regard to the impact that this legislation could have on this land.

*** Preservation of Trees and Vegetation**

See Clauses 5.9 and 5.9AA of Penrith Local Environmental Plan 2010 and Chapter C2 of Penrith Development Control Plan 2014 for specific controls relating to the preservation of trees and vegetation.

*** Development Control Plan General Information**

Penrith Development Control Plan 2014 which applies to the land, sets out requirements for a range of issues that apply across the Penrith Local Government Area, including:

- Site Planning and Design Principles
- Vegetation Management
- Water Management
- Land Management
- Waste Management
- Landscape Design
- Culture and Heritage
- Public Domain
- Advertising and Signage
- Transport, Access and Parking
- Subdivision
- Noise and Vibration, and
- Infrastructure and Services.

The Development Control Plan also specifies requirements relating to various types of land uses including:

- Rural Land Uses
- Residential Development
- Commercial and Retail Development, and
- Industrial Development

as well as for a number of specific activities, including child care centres; health consulting rooms; educational establishments; parent friendly amenities; places of public worship; vehicle repair stations; cemeteries, crematoria and funeral homes; extractive industries; and telecommunication facilities.

The Development Control Plan also details requirements relating to key precincts within the Penrith Local Government Area, including:

- Caddens
- Claremont Meadows Stage 2
- Cranebrook
- Emu Heights
- Emu Plains
- Erskine Business Park
- Glenmore Park

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

- Kingswood
- Mulgoa Valley
- Orchard Hills
- Penrith
- Penrith Health and Education Precinct
- Riverlink Precinct
- St Clair, and
- St Marys / St Marys North.

Penrith Development Control Plan 2014 may be accessed at
<https://www.penrithcity.nsw.gov.au/Building-and-Development/Planning-and-Zoning/Planning-Controls/Development-Control-Plans/>

*** Penrith City Centre Controls**

See Part 8 of Penrith Local Environmental Plan 2010 and Chapter E11 of Penrith Development Control Plan 2014 for specific controls relating to Penrith City Centre (which includes the subject property).

* Council holds environmental report(s) relating to the subject property. Copies of the report(s) are available from Council for inspection by interested persons. Interested persons should satisfy themselves as to the state of the land and in relation to any matter or thing, including any documents referred to in, or disclosed by, this notation.

Report Title, Prepared by, Date

Proposed Residential Development: Lord Sheffield Circuit, North Penrith - Contamination Assessment of Soils, prepared by Geotechnique Pty Ltd, dated 29 July 2014 (Ref. 13217/1-AA).

Council Ref No.

IMS 6346547 DA14/1182

* Council holds environmental report(s) relating to the subject property. Copies of the report(s) are available from Council for inspection by interested persons. Interested persons should satisfy themselves as to the state of the land and in relation to any matter or thing, including any documents referred to in, or disclosed by, this notation.

Report Title: Contamination: North Penrith Stages 2B, 2C, 2D, 3A & 3B - Assessment Report

Prepared by: Geotechnique Pty Ltd

Date: undated (Ref. 12609/1).

Council Ref No.: ECM ID 4296668

* Council holds environmental report(s) relating to the subject property. Copies of the report(s) are available from Council for inspection by interested persons. Interested persons should satisfy themselves as to the state of the land and in relation to any matter or thing, including any documents referred to in, or disclosed by, this notation.

PLANNING CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979

Report Details:

Report title: NPASD Phase 1 - Site History, Preliminary
Sampling and Work Plan
(Report No: VA0102/RP01)

Prepared by: CMOS & F Environmental
67, Albert Avenue
Chatswood NSW

Dated: May 1998

Report title: NPASD Phase 2 - Contamination Investigation
(Report No: VA0102/Rp03)

Prepared by: CMPS & F Environmental
67, Albert Avenue
Chatswood NSW

Dated: September 1998

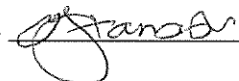
Report title: Contamination Assessment - Phase 3
Remedial Action Plan for North Penrith Army
Stores Depot

Prepared by: CMPS & F Environmental
67, Albert Avenue
Chatswood NSW

Dated: September 1998

Council ref. no: 4131/1 Part 31

Alan Stoneham
General Manager

PER 

Appendix E: Title Search

Summary of Owners Report
Address: Lord Sheffield Circuit, Penrith

Description - Lot 3003, 3004 & 3005 in DP 1184498

<u>Date of Acquisition</u>	<u>Registered Proprietor</u>	<u>Reference to Title</u>
25 January 1939	Sydney Smith	Volume 5040 Folio 229
20 September 1948	The Commonwealth of Australia as a Corporation	Volume 5040 Folio 229 As to part
18 December 1948	Hugh Read	Volume 5040 Folio 229 As to part
27 January 1953	The Commonwealth of Australia	Volume 6620 Folio 94 As to part
15 October 1965	The Commonwealth of Australia	Volume 10140 Folio 229 As to Lot 1 in DP 33753 and part Lot 1 in DP 33754
29 March 1949	High Read	Volume 5944 Folio 132 As to part
10 May 1947	Joseph Hamilton Strong	Volume 5944 Folio 132
29 May 1952	The Commonwealth of Australia	Volume 5944 Folio 132
9 September 1952	Joseph Hamilton Strong	Volume 6557 Folio 228 As to part
5 December 1962	Penrith Projects Pty Ltd and Gregory (Aust) Pty Ltd	Volume 9329 Folios 34 & 35 As to parts as road
15 October 1965	The Commonwealth of Australia	Volume 10140 Folio 229
31 March 2006	Dp 1095946 registered	Folio Identifier 1/1095946

4 March 2011	Commonwealth of Australia	Folio Identifier 11/1159973 Edition 1 created
25 May 2013	Landcom	Folio Identifier 11/1159973
25 March 2013	Dp 1171491 registered	Folio Identifier 1196/1171491 Edition 1
1 July 2015	# Landcom	Folio Identifiers 3003, 3004 and 3005 in Deposited Plan 1184498.
	# Deonotes Current Registered Proprietor	

Cadastral Records Enquiry Report

Ref : JD

Requested Parcel : Lot 3004 DP 1184498

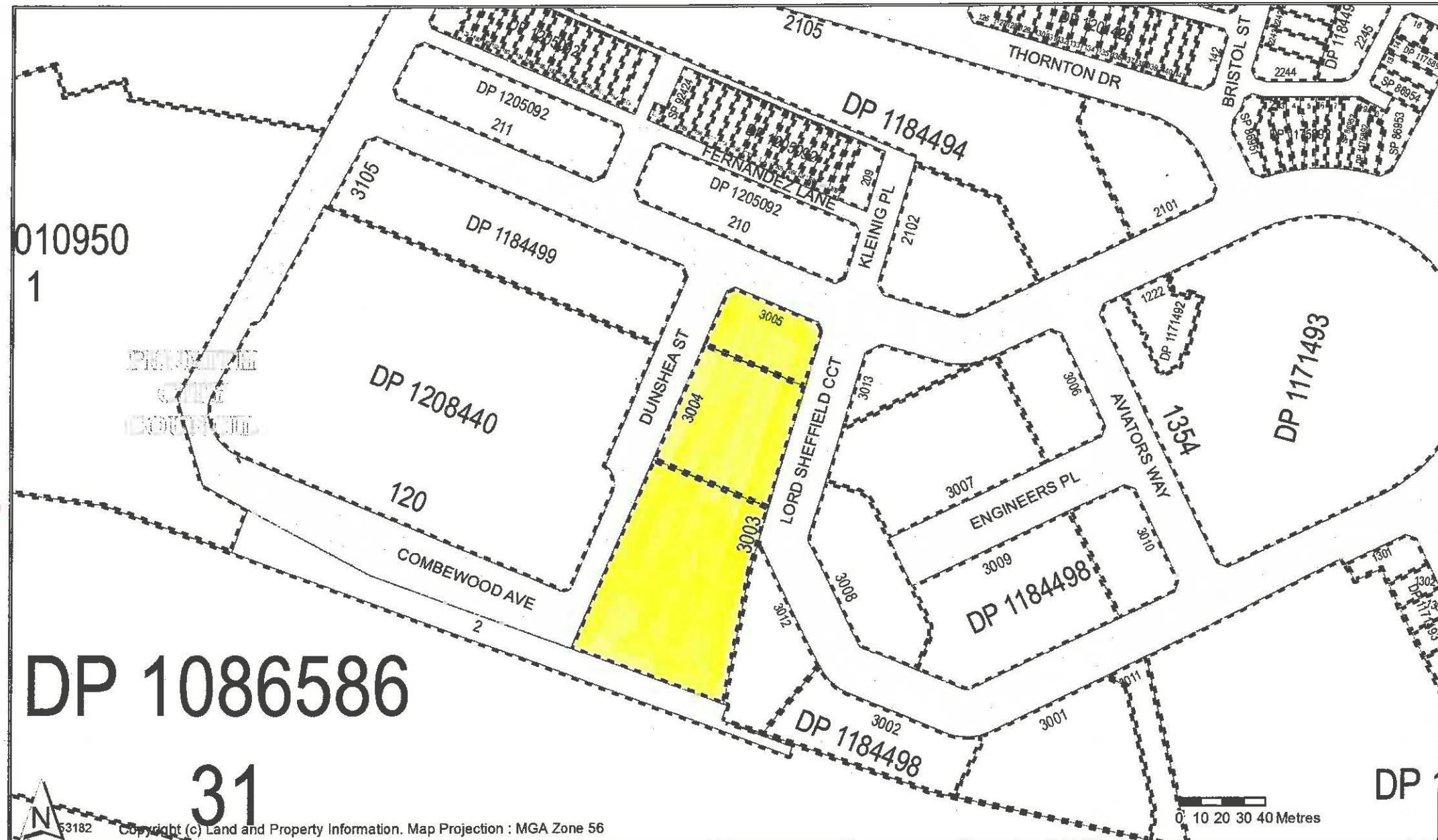
Identified Parcel : Lot 3004 DP 1184498

Locality : PENRITH

LGA : PENRITH

Parish : CASTLEREAGH

County : CUMBERLAND





Morris Hayes & Edgar hereby certifies that the information contained in this document has been provided electronically by the Registrar General.
Information provided through Tri-Search an approved LPI/NSW Information Broker

Reverse Street Address Results

Title	Address
3003/1184498	184 LORD SHEFFIELD CCT PENRITH 2750



Morris Hayes & Edgar hereby certifies that the information contained in this document has been provided electronically by the Registrar General.
Information provided through Tri-Search an approved LPINSW Information Broker

Reverse Street Address Results

Title	Address
3004/1184498	192 LORD SHEFFIELD CCT
	PENRITH 2750



Morris Hayes & Edgar hereby certifies that the information contained in this document has been provided electronically by the Registrar General.
Information provided through Tri-Search an approved LPINSW Information Broker

Reverse Street Address Results

Title	Address
3005/1184498	41 LORD SHEFFIELD CCT PENRITH 2750

301.

App. No. 1413

Reference to last certificate

Vol. 470 Fol. 221

New South Wales.



[CERTIFICATE OF TITLE.]

JOINT TENANCY
ORDER NO. C721489.

REGISTER BOOK.

Vol. 5010 Fol. 229

CANCELLED

SYDNEY SMITH, of Chatswood, Civil Servant, and AMY HOWARD, wife of Owen James Howard, of Manly, Freehold-
er, by virtue of Certificate of Title Volume 470 Folio 221, now surrendered are now the proprietors of
an Estate in Fee Simple as Joint Tenants,
subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such
encumbrances, liens, and interests as are notified hereon, in That piece of land situated
in the Municipality of Penrith Parish of Castlereagh, and County of Cumberland
containing Two hundred and fourteen acres one rood twenty and three quarters perches or thereabouts as
shown in the plan hereon and therein edged red being part of 1000 acres (Portion 90 of Parish) originally
granted to Daniel Woodriff by Crown Grant dated the 1st day of February 1804.

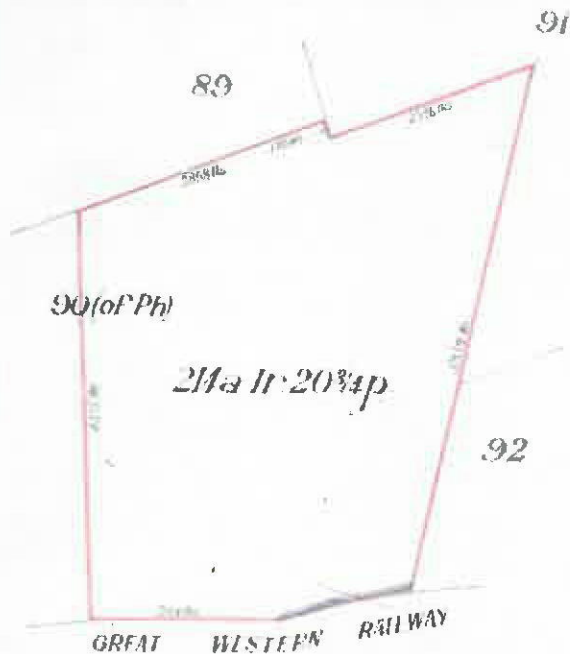
In witness whereof I have hereunto signed my name and affixed my Seal, this fourth day of January 1939.

Signed in the presence of

Whidgard

Reg. W. Miles

Registrar General



No. C720329 WITHDRAWAL of the within Caveat
No. C612452 dated 5th December 1937
Produced 1st February 1939 and entered
1st February 1939
at 11 o'clock in the forenoon.
Reg. W. Miles
REGISTRAR GENERAL

2893 MORTGAGE dated 11 May 1938
of the said Sydney Smith and Amy Howard to the Sydney
Bank of Australia Limited
Produced 11th May 1938 and entered 11th May 1938
at 1 o'clock in the forenoon.
Reg. W. Miles
REGISTRAR GENERAL

No. C40747 Caveat dated 15th November 1937
from the said Sydney Smith and Amy Howard
jointly co-owners of mortgage to the Sydney
Bank of Australia Limited of part of the land within
described
Produced 21st February 1940 and entered 20th November 1939
at 9 o'clock in the forenoon.
Reg. W. Miles
REGISTRAR GENERAL

NOTIFICATION REFERRED TO

No. 322528 Caveat dated the 13th day of May 1901 by
the Registrar General Produced and entered the 13th
day of May 1901 at 4 o'clock in the afternoon.

Reg. W. Miles

Registrar General.



No. 0612452 Caveat dated the 28th day of December 1937
as regards part of the land above described Produced
the 30th day of December 1937 and entered the 9th day
of February 1938 at 10 o'clock in the forenoon.

Reg. W. Miles

Registrar General.



No C 933716 NOTICE OF RESUMPTION. An easement affecting that part of the land within described above by the colour in the plan hereon has become vested in the Commission for the purposes of the Public Works Act 1912 by operation of the said Act and in pursuance of the Gazette Notice in connection therewith freed and discharged from all trusts obligations estates interests contracts charges rates rights-of-way or other encumbrances whatsoever.

Produced in duplicate 1947 and entered 20th January 1947 at 12 o'clock in the noon.

[Signature]
Registrar General



No D617150 In pursuance of Section 44A of the Real Property Act 1900 the Commonwealth of Australia as a corporation under Section 57 of Lands Acquisition Act 1906 (Commonwealth) is registered as proprietor of parts of the land within described freed and discharged from all trusts obligations estates interests contracts licenses charges rates and easements

Produced in duplicate 1947 and entered 22nd September 1947 at 12 o'clock noon

No 20 in the Register
this certificate is cancelled
and no Certificate issued
Vol 6620 Fol 94

[Signature]
Registrar General



No D72070762 DISCHARGE of mortgage
(75937) dated 12th March 1947
Produced in duplicate 1947 and entered 8th December 1947 at 12 o'clock noon

[Signature]
Registrar General



No D62171 TRANSFER 17th March 1947
sup the said Sydney Smith and Co
Howard to the said 16 parts

Produced in duplicate 1947 and entered 17th March 1947 at 12 o'clock noon

[Signature]
Registrar General



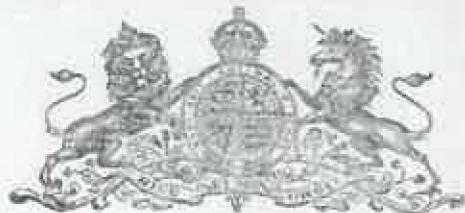
New South Wales.

[CERTIFICATE OF TITLE]

Application No. 1413

Reference to last certificate

Vol. 5010 Fol. 329



Register Book

Vol. 5944 Fol. 132

CANCELLED W

HUGH HEAD of Canberra in the Australian Capital Territory, Grazier, Transferee under Instrument of Transfer No. D762171 is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions if any contained in the Grant hereinafter referred to and also subject to such encumbrances liens and interests as are notified hereon in That piece of land situated in the Municipality of Penrith, Parish of Castlereagh and County of Cumberland containing One hundred and eleven acres three roods three perches or thereabouts as shown in the plan hereon and therein edged red and also shown in plan annexed to the said Instrument of Transfer No. D762171 being part of 1000 acres (Portion 90 of Parish) originally granted to Daniel Woodriff by Crown Grant dated the 1st day of February, 1804.

In witness whereof I have hereunto signed my name and affixed my Seal this Twenty Ninth day of March 1949.

Signed in the presence of

Registrar General.



No. D762172 MORTGAGE dated 11th November 1947
from the said Hugh Head to the Commercial Bank of Australia Limited
Produced 11th November 1947 and entered 13th March 1949
at 12 o'clock in the noon.

REGISTRAR GENERAL

For use in connection with Certificate of Title No. Vol. 6557 Fol. 228
for use of
50 FUSE 24

No. F5145 MORTGAGE dated 6th April 1949
from the said Hugh Head to the Commercial Bank of Australia Limited
Produced 10th May 1949 and entered 10th May 1949
at 12 o'clock in the noon.

REGISTRAR GENERAL

No. E544 TRANSFER dated 11th April 1949
from the said Hugh Head to the Commercial Bank of Australia Limited
Produced 10th May 1949 and entered 10th May 1949
at 12 o'clock in the noon.

REGISTRAR GENERAL

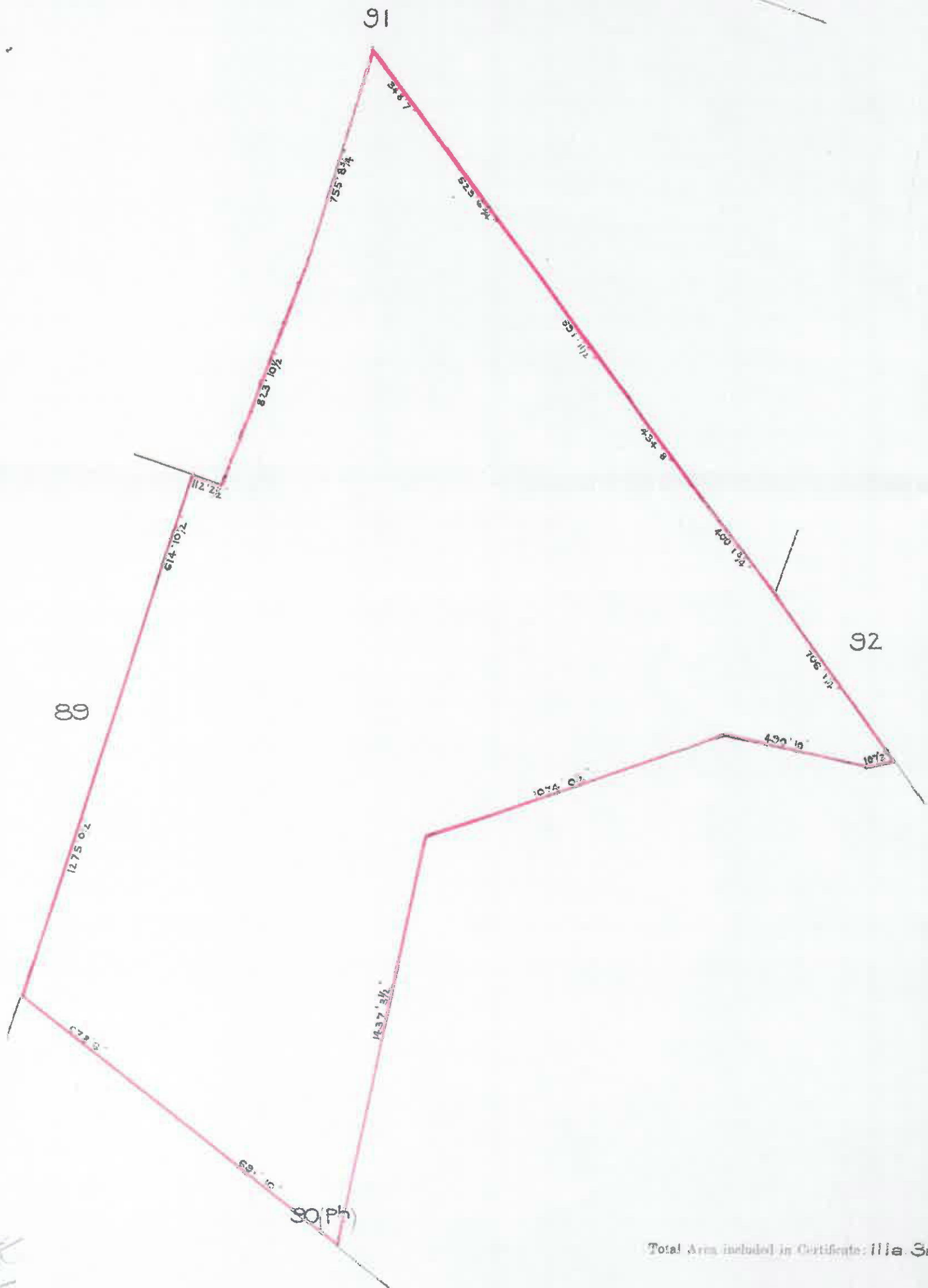
No. E544 MORTGAGE dated 11th April 1949
from the said Hugh Head to the Commercial Bank of Australia Limited
Produced 10th May 1949 and entered 10th May 1949
at 12 o'clock in the noon.

REGISTRAR GENERAL

No. F511455 NOTIFICATION OF ACQUISITION
The Commercial Bank of Australia is the proprietor of part
of the land within described freed
from all other interests.
Produced 4th August 1951 and entered 52nd May 1952
at 12 o'clock in the noon.

REGISTRAR GENERAL

5944-132



0762171

Total Area included in Certificate: 111a 3r 3c

All lengths shown herein are in feet & inches

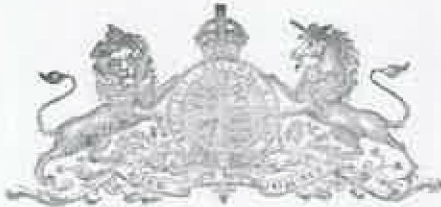
Scale: 300 feet to one inch

Appl. No. 1413

Reference to last Certificate

Vol. 594 Fol. 131

New South Wales.



(CERTIFICATE OF TITLE)

ORDER NO. P48324

CANCELLED
6557 228

JOSEPH HAMILTON STRONG, of Penrith, Dairy Farmer, by virtue of Certificate of Title Volume 594 Folio 131 now surrendered is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions if any contained in the Grant hereinafter referred to and also subject to such encumbrances liens and interests as are notified hereon in That piece of land situated in the Municipality of Penrith Parish of Castlereagh and County of Cumberland containing One hundred and nine acres three roods thirty one and one half perches or thereabouts as shown in the plan hereon and therein edged red being part of 1000 acres (Portion 90 of Parish) originally granted to Daniel Woodriff by Crown Grant dated the 1st day of February 1804.

In witness whereof I have hereto signed my name and affixed my Seal, this Ninth day of September 1952

Signed in the presence of

J. H. Strong

J. H. Pells

Registrar General.

NOTIFICATION REFERRED TO

No. 77547 Mortgage dated the 13th day of April 1949 from Joseph Hamilton Strong to Bank of New South Wales. Produced and entered the 10th day of May 1949 at 40 minutes past 11 o'clock in the forenoon.

Registrar General.

Plx No. J123986. Caveat, Produced 9th August 1962 & entered 31st August 1962. J123986 regards Lot 164.

Registrar General

DISCHARGE of within mortgage
No. 77547 dated 26th July 1954
Produced 22nd September 1954 and entered 10th September 1954
at 10 o'clock in the forenoon.
J. H. Pells
REGISTRAR GENERAL

Self Cert. regarding lots 1 & 2 in DP 209794
This deed is expedited as to the whole
New Certificate of Title have been issued for lots 1 & 2
Reproduced Plan No. 209794 as follows:
Lot 1 & 2 Vol. 9329 Fols 34 & 35 respectively
J. H. Pells
REGISTRAR GENERAL

No H467378

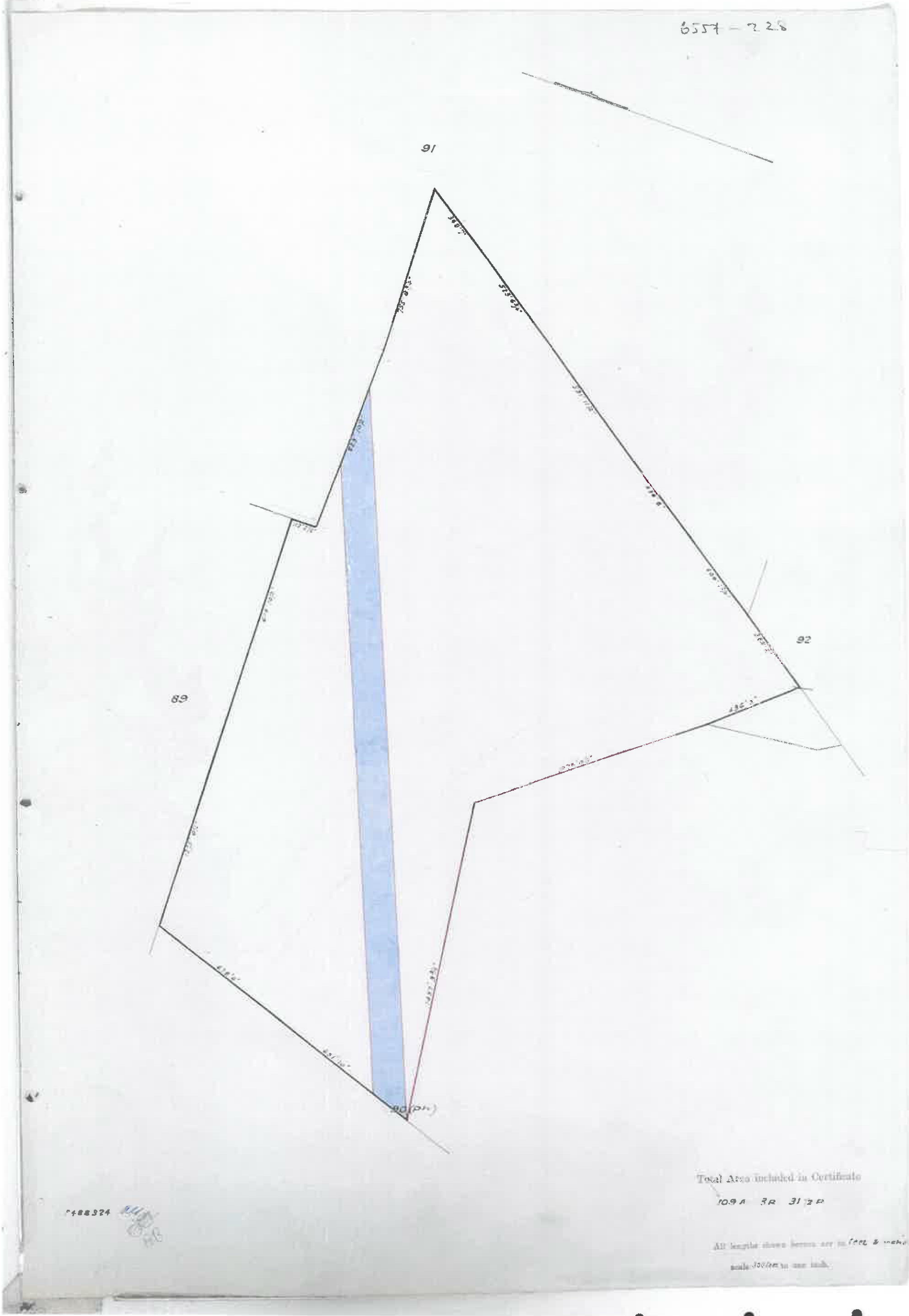
NOTICE OF RESUMPTION

ELECTRICITY COMMISSION OF NEW SOUTH WALES is the proprietor of an easement for Transmission Line affecting that part of the land within described shown by blue colour on the plan hereon freed from all other interests
Entered 29th August 1961

J. H. Pells



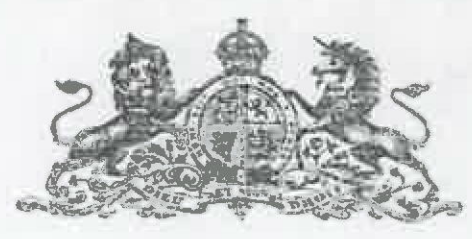
REGISTRAR GENERAL



Appl. Nos. 56770 and 57903 (as to part)
Reference to Last Certificates
Vol. 5030 Fol. 229
* 594. * 132

New South Wales.

[CERTIFICATE OF TITLE.]



Registered Book
Vol. 6620 Fol. 94
CANCELLED W

THE COMMONWEALTH OF AUSTRALIA, Applicant as to part in Primary Applications Nos. 56770 and 57903 and as to the other part by virtue of Notifications of Acquisition Nos. D617150 and D511455 is now the proprietor of an Estate in Fee Simple subject nevertheless to such encumbrances liens and interests as are notified hereon in Firstly that piece of land situated in the Municipality of Parrish Parish of Castlereagh and County of Cumberland containing Ninety seven acres twenty and one half perches or thereabouts being part of 1000 acres (Portion 90 of Parish) originally granted to Daniel Woodriff by Crown Grant dated the 1st day of February 1804. Secondly, That piece of land situated as aforesaid containing Seven acres one rood ten and one half perches or thereabouts being part of 100 acres (Portion 92 of Parish) originally granted to Sarah MacHenry, Henry Sulton and Alexander Fraser by Crown Grant dated the 6th day of September 1834. Which said pieces of land are shown in the plan hereon and therein edged red and are also shown as to the land firstly above described in plans annexed to the said Acquisitions Nos. D617150 and D511455 and as to the land secondly above described in plans lodged with the said Application Nos. 56770 and 57903.

In witness whereof I have hereunto signed my name and affixed my Seal, this 27th day of January 1963

Signed in the presence of R.R. FitzGerald

J. H. Pells
Registrar General.

NOTIFICATION REFERRED TO

Easement or right to use in any manner the surface and subsoil of the land colored blue in the plan hereon, for constructing for railway purposes an electric high tension transmission line, resumed and notified in New South Wales Government Gazette No. 99 of 19th July 1960 pages 2891 and 2892.

J. H. Pells
Registrar General.

This land is situated in the Parish of ...
and is shown in the plan hereon as being ...
deposited ...
on 27th January 1963

Jaworski
Registrar General.

345
2012/12

T 35042
The Electricity Commissioners of New South Wales of the land edged red in plan annexed to ...
of the land within described, ...
entering on railway and other ...
Entered 17th August 1963
Jaworski
Registrar General.

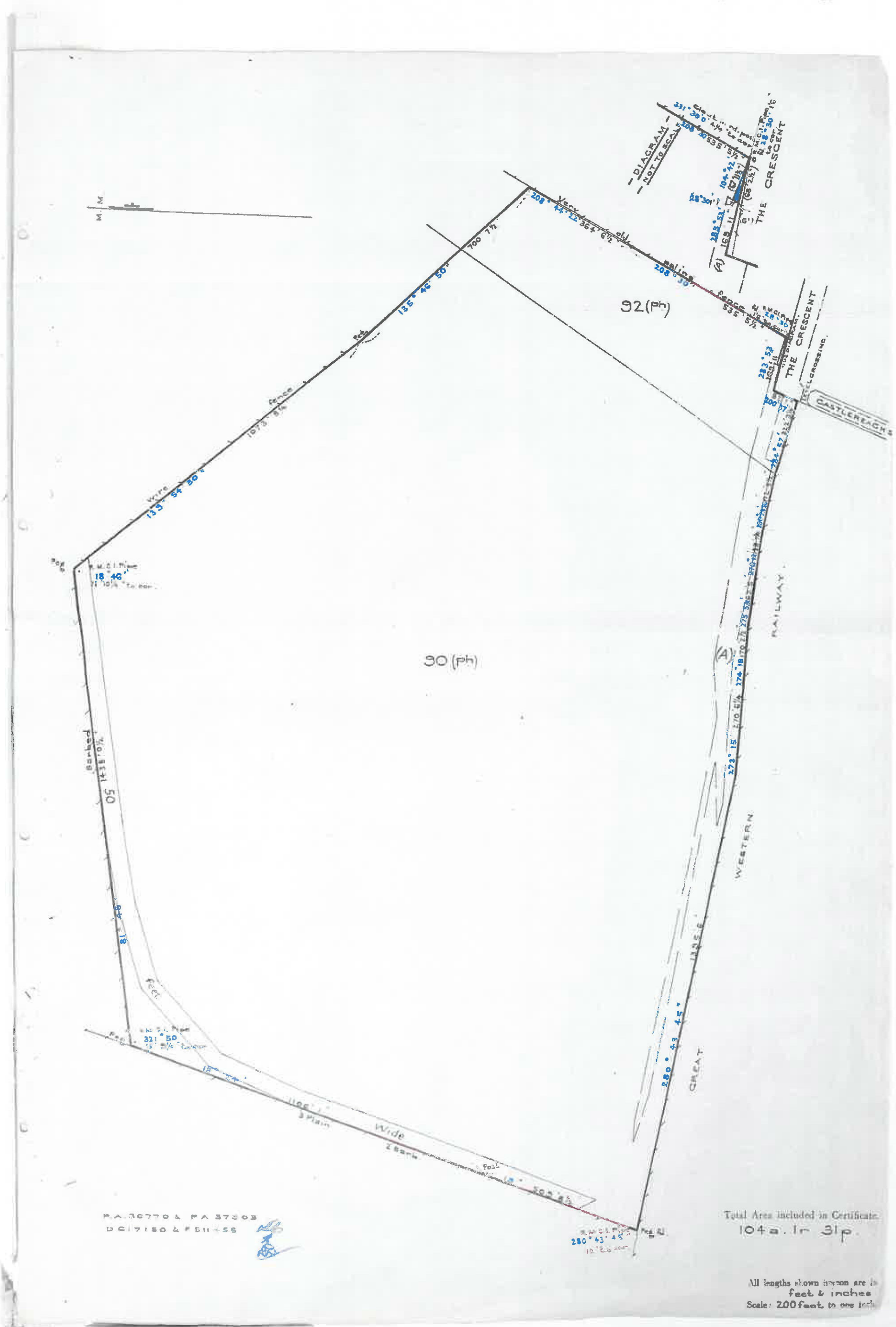
Nº 5285861 Transfer and Grant dated 23rd November 1964 to The Commissioner for Railways of an easement for transmission line as more fully set out in the said instrument affecting that part of the land within described, designated ... in the plan hereon.
Executed 22nd February 1965

Jaworski
Registrar General.

No. 5014971 Transfer and Grant dated 2nd March 1965 to The Prospect County Council of an easement for power lines (as more fully set out in the said instrument) affecting that part of the land within described shown 52 feet wide in the plan hereon.
Executed 3rd June 1965

Jaworski
Registrar General.

As to ...
this Deed is cancelled and new Certificate of Title issued
Vol. 6620 Fol. 229
Jaworski
Registrar General.





09329034

M
NEW SOUTH WALES

(For Grant and title reference
prior to first edition see
Deposited Plan.)

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



CANCELLED
Vol. 9329 Fol. 134

1st Edition issued 5-12-1962.

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

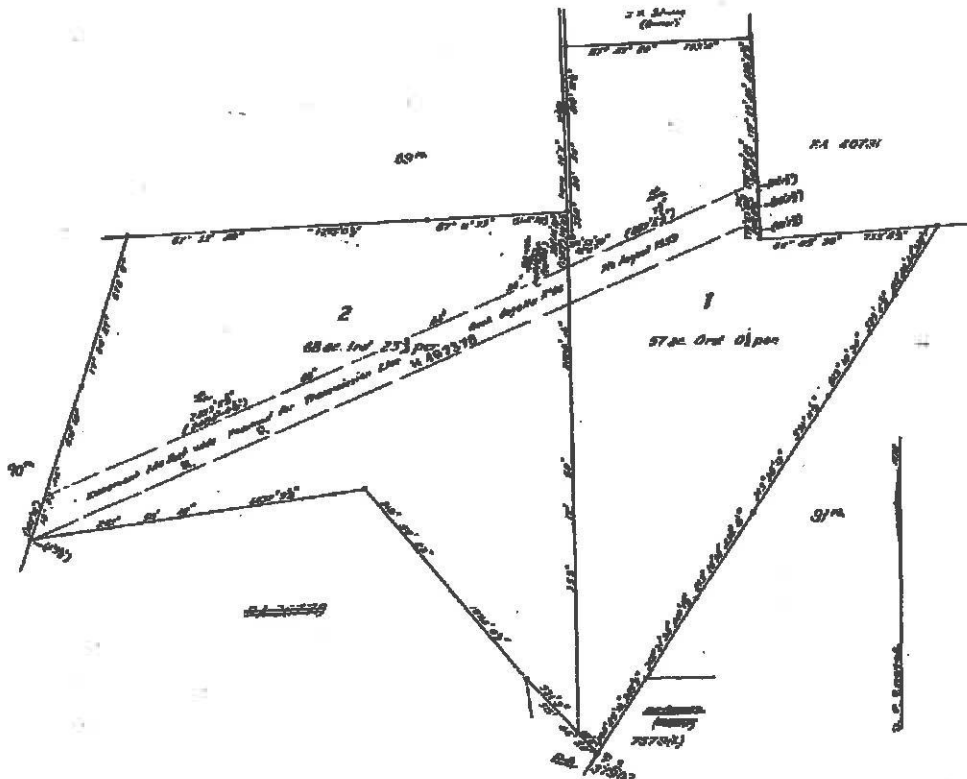
Witness

H. H. H. H.

J. Watson
Registrar-General.



PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 1 in Deposited Plan 209794 at Penrith in the City of Penrith Parish of Castlereagh and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~JOSEPH HAMILTON STRONG, of Penrith, Dairy Farmer.~~

J. Watson
Registrar-General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Easement for Transmission Line created by Notice of Resumption No. R461378 affecting the easement 140 feet wide resumed for transmission line shown in the plan hereon.
3. Caveat No. J123986 as regards Lot 164 in plan with J123986. Entered 31-8-1962.

J. Watson
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

34
9329
(Page 1) Vol.

Vol. 9329 Fol 34

FIRST SCHEDULE (continued)					
REGISTERED PROPRIETOR		INSTRUMENT		ENTERED	Signature of Registrar-General
NATURE	NUMBER	DATE			
<i>Penilla Projects Pty. Limited</i> This deed is cancelled as to <i>part</i> New Certificates of Title have issued for lots in <i>Deposited</i> Plan No. <i>216753</i> as follows:- { <i>Lot 1 to 40</i> Vol. <i>9514</i> Fol. <i>11 to 50</i> respectively <i>" 41 to 90</i> " <i>9514</i> " <i>51 to 100</i> <i>" 91 to 118</i> " <i>9514</i> " <i>101 to 128</i> <i>" 120 to 141</i> " <i>9514</i> " <i>129 to 150</i> <i>" 142 to 175</i> " <i>9514</i> " <i>151 to 199</i> <i>Janetson</i> REGISTRAR GENERAL		<i>Transferred</i> <i>11978846</i> <i>24.11.1961</i> <i>12.2.1963</i> <i>Janetson</i>			
This deed is cancelled as to <i>the residue (see road)</i> New Certificates of Title have issued for lots in <i>Deposited</i> Plan No. <i>501186</i> as follows:- Lots <i>land 2</i> Vol. <i>9611</i> Fol. <i>5 and 6</i> respectively <i>Janetson</i> REGISTRAR GENERAL		<i>Transfer</i> <i>1329165</i> <i>3.4.1963</i> <i>21.11.1963</i> <i>Janetson</i>			

The Council of the City of Toronto of Lot 119 of 216753 pursuant to section 230A Local Government Act 1919 and Penilla Projects Pty. Limited of Lot 186 of 216783

Page 2 of 2 pages)

SECOND SCHEDULE (continued)						
NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION
Covenant	H 978546		Created by Transfer H 978546	12.2.1963	<i>James</i>	
Mortgage	H 978247	14.11.1961	Joseph Hamilton Strong of Penrith Drain Farmer	12.2.1963	<i>James</i>	Discharged J34 3:65 <i>James</i>
Caveat	J 116829		lots 91 and 92 in plan with J 116829 The interest of the Council of the City of Penrith in the new roads and appurtenant easements shown in D.P. 216783	12.2.1963	<i>James</i>	J 4 21645 WX lot 164 24 — 4 T. lot 164
			lots 7 and 119 are subject to the provisions of section 340A of the Local Government Act 1969 shown in D.P. 216783	22-5-63	<i>James</i>	
Transfer	2329164	3.2.1963	Enclosed and 185 shown D.P. 216783 The interest of the Council of the City of Penrith in the addition to existing road shown on H 602100 lot 2 in H 602100 is subject to the provisions of section 340A of the Local Government Act 1919	22-5-63	<i>James</i>	Cancelled J329165 <i>James</i>
			Easement for Driveway (as more fully set out in the said instrument) affecting the site of proposed drainage easement 8 feet wide within lots 783 and the site of proposed drainage easement 6 feet wide within lots 25, 76, 77, 78, 81, 176 to 179	15.7.1963	<i>James</i>	
				19.11.1963	<i>James</i>	
				19.11.1963	<i>James</i>	

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



NEW

M
NEW SOUTH WALES

(For Grant and title reference
prior to first edition see
Deposited Plan.)

CERTIFICATE OF TITLE
PROPERTY ACT, 1900, as amended.



CANCELLED
Vol. 9329 Fol. 35

1st Edition issued 5-12-1962.

CANCELLED

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

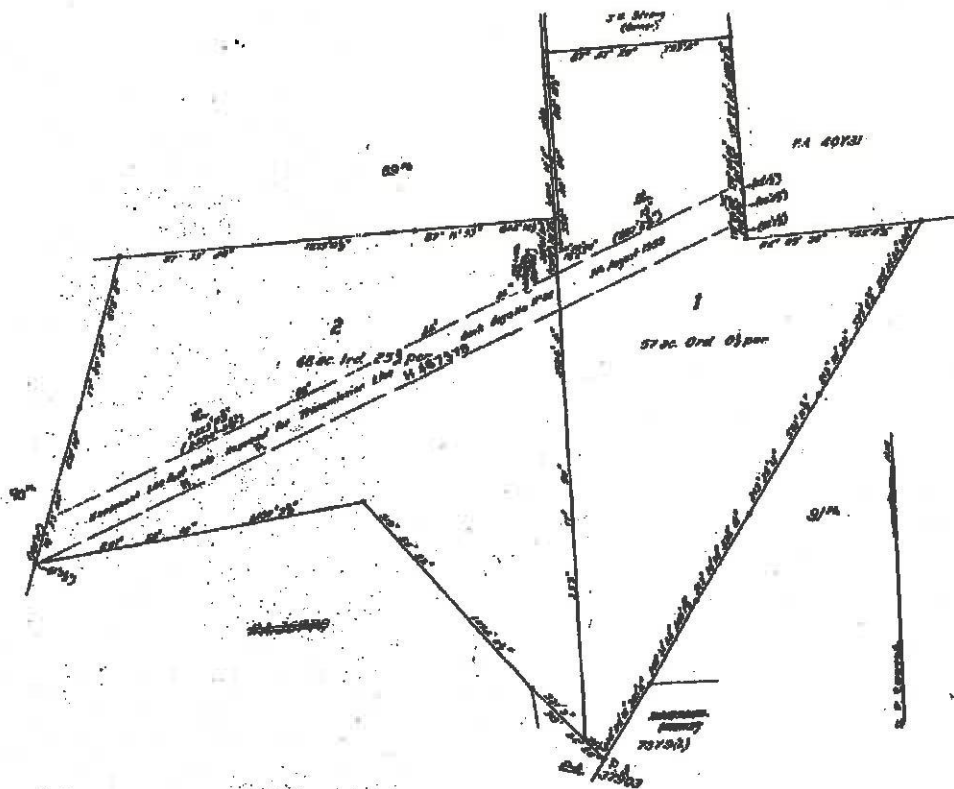
Witness

Heritaby

Jawatson
Registrar-General.



PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 2 in Deposited Plan 209794 at Penrith in the City of Penrith Parish of Castlereagh and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~JOHN HANCOCK, of Penrith, Dairy Farmer.~~

Jawatson
Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. Easement for Transmission Line created by Notice of Resumption No. H467378 affecting the easement 140 feet wide resumed for transmission line shown in the plan hereon.

Jawatson
Registrar General.

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

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Vol. 9329 Fol. 35

REGISTERED PROPRIETOR		NATURE	INSTRUMENT NUMBER	DATE	ENTERED	Signatures of Registrar-General
<i>Grey (Australasia) Pty Limited</i> The Commonwealth of Australia as regards part being Lot 1 in DP532379 and Grey (Australasia) Pty Limited as regards the residue. This Deed is cancelled as to part and New Certificates of Title Vol 11261 Fol 219 & 220 issued on 2-3-1970 for lots 6 & 8.		<i>Transfer</i>	<i>5758771</i>	<i>20-3-1967</i>	<i>9-9-1967</i>	<i>Jawatson</i>
		<i>Acquisition</i>	<i>L638973</i>		<i>18-11-1969</i>	<i>Jawatson</i>
		<i>Deposited Plan</i>	<i>287089</i>		<i>23-3-1970</i>	<i>Jawatson</i>
As to <i>the residue</i> this Deed is cancelled and New Certificate of Title issued Vol <i>11472</i> Fol <i>73</i> dated <i>24-11-1970</i> Vide <i>L638973</i>						
<i>Jawatson</i> REGISTRAR GENERAL 						

Page 2 of 2 pages)

SECOND SCHEDULE (continued)				ENTERED	Signature of Registrar-General	CANCELLATION	
NATURE	INSTRUMENT NUMBER	DATE	PARTICULARS				
			The interest of the Council of the City of Perth in the new road shown on D.P. 238536.	19.10.1967	<i>J. J. J.</i>		
			The interest of the Council of the City of Perth in the new road shown on D.P. 524457.	18.11.1967	<i>J. J. J.</i>		
Caveat	L398430	15.4.1969	as regards lot 6 on D.P. 237089.	2.5.1969	<i>J. J. J.</i>		

ALL INSTRUMENTS AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

FORM No. 184

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



CT10140-229

G. 1
NEW SOUTH WALES

CERTIFICATE OF TITLE
REAL PROPERTY ACT, 1900, as amended.

Applications Nos. 1413, 36770 and 37903

Prior Title Volume 6620 Folio 94



Vol. _____ Fol. _____

1st Edition issued 15-10-1965

EH J960057

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

Witness

M. J. Woodruff

**CANCELLED
SEE AUTO FOLIO**

Jawatson

Registrar-General.



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 1 in Deposited Plan 33753 and part of Lot 1 in Deposited Plan 33754 in the City of Penrith Parish of Castlereagh and County of Cumberland being part of Portion 90 granted to Daniel Woodruff on 1-2-1804 and part of Portion 92 granted to Sarah MacHenry, Henry Fulton and Alexander Fraser on 6-9-1834.

Jawatson

Registrar General.

FIRST SCHEDULE (continued overleaf)

THE COMMONWEALTH OF AUSTRALIA.

Jawatson

Registrar General.

SECOND SCHEDULE (continued overleaf)

1. Easement for Transmission Line created by notification in Government Gazette of 19-7-1940 Folios 2891 and 2892 affecting the part of the land above described designated (B) in the plan hereon.
2. Certain rights created by Transfer No. J38042 appurtenant to the land above described affecting the land comprised in Deposited Plan 104189 shown in the plan hereon which rights are more fully set out in the said Transfer.
3. Easement for Power Line created by Transfer No. J611971 affecting the part of the land above described shown as 50 feet wide in the plan hereon.
4. Easement for Transmission Line created by Transfer No. J885861 affecting the part of the land above described designated (A) in the plan hereon.

Jawatson

Registrar General.

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

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

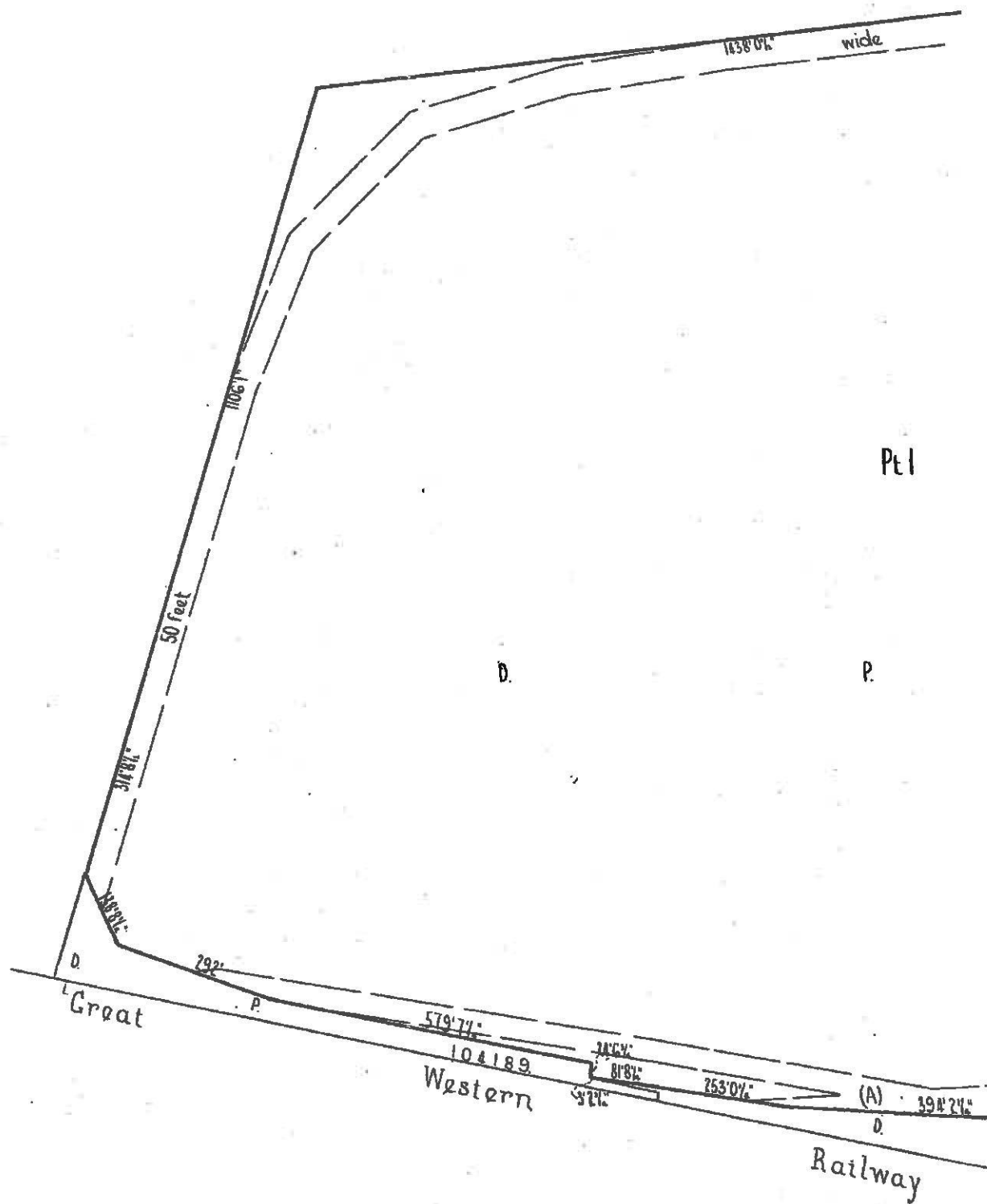
10140 229
Folio
(Page 1) Vol.

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

1015' 11"
 33754
 100' 71"
 D. P. 33753
 104' 61"
 185' 51"
 286' 4"
 139'
 173' 4"
 36' 10"
 39'
 188' 61"
 165' 11"
 (1)
 (2)
 (3)
 P.
 222813
 The Crescent

1. to one inch
are in feet and inches.

PLAN SHOWING LOCA



J960057114
40.

Area: 102a.1r.2
Scale: 200. feet
All lengths shown hereon

FORM No. 161A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

INSTRUMENT		PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION	
NUMBER	DATE				ENTERED	Signature of Registrar-General
TRANSFER	1850417	30.6.1971				
Assessment for Miller Street (as now built) not set in the said instrument) affecting that part of the land within the said 2.66 ares wide and variable width known as the 1st segment bounded by Miller Street at the back and was made in the said instrument No. 1850417.						
Assessment to be made in more fully set out in the said instrument) registered to the land within the said 2.66 ares wide and variable width of land shown on the 1st of the said instrument for the purpose of the said assessment No. 1850417.						
10 a wide and variable width No. 1850417 (as per 220)						
FOLIO CANCELLED NEW FOLIO: AC 10140-229						
NO FURTHER DEALINGS TO BE REGISTERED						

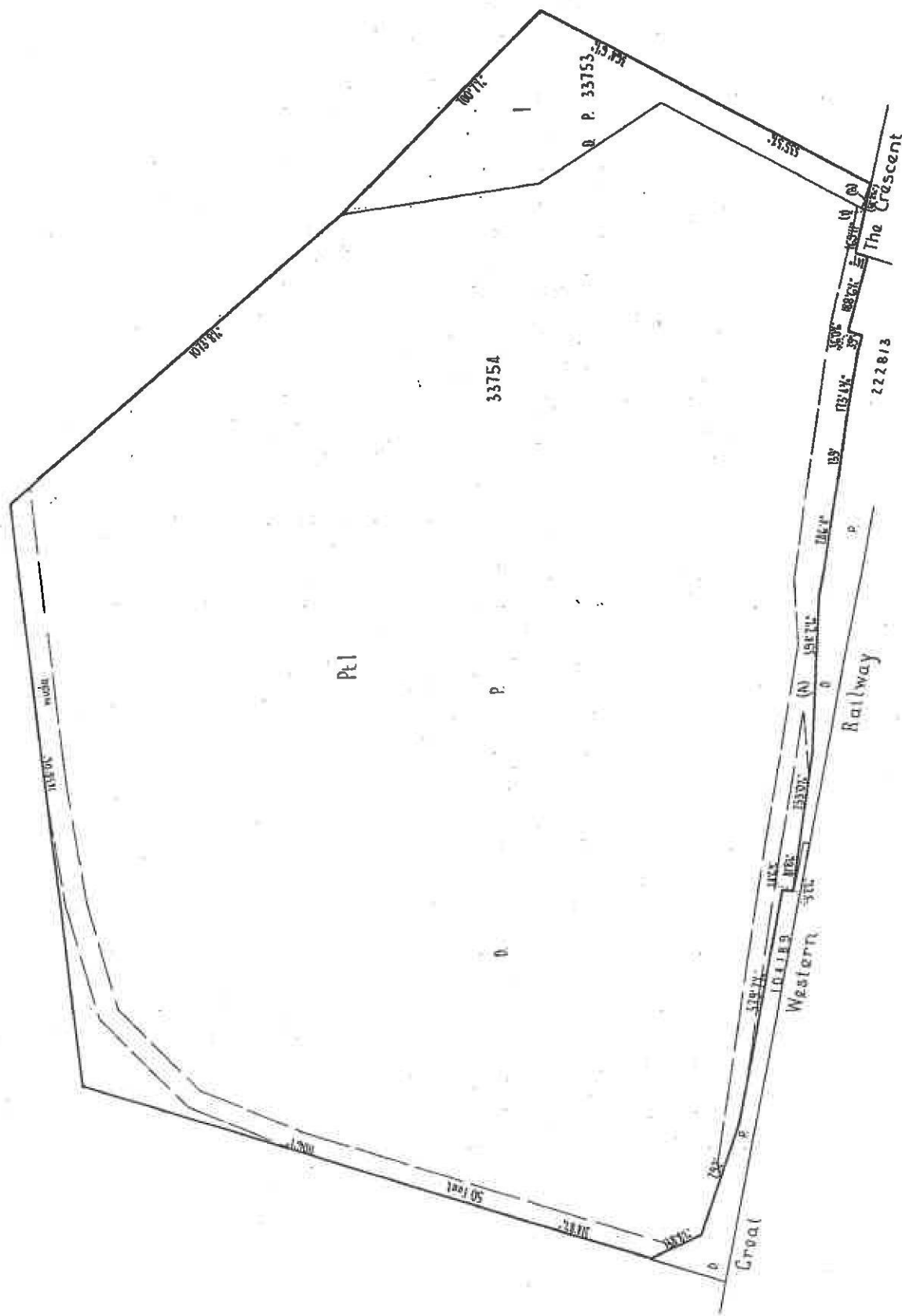
CT 39/8
1/1/72
14.8.1944
N26550118
P850417
N26
DP 6378488

(Page 3 of 4 pages)

10140 fol 229

(Page 2 of 4 pages)

PLAN SHOWING LOCATION OF LAND



Area: 102a. 1 r. 2 1/4 p.
Scale: 200 feet to one inch.
All lengths shown herein are in feet and inches.

1960057119

Morris Hayes & Edgar hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

Information provided through Tri-Search an approved LPI/NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

13/9/2016 11:39AM

FOLIO: 1/1095946

First Title(s): OLD SYSTEM
Prior Title(s): VOL 10140 FOL 229

Recorded	Number	Type of Instrument	C.T. Issue
31/3/2006	DP1095946	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
4/4/2006	AC215229	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
4/4/2006	AC220637	CONVERTED TO AUTO CONSOL 10140-229	CONSOL CREATED CT NOT ISSUED
4/3/2011	AG99784	EXCISED FROM AUTO CONSOL 10140-229	
4/3/2011	DP1159973	DEPOSITED PLAN	FOLIO CANCELLED

*** END OF SEARCH ***

jd

PRINTED ON 13/9/2016

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

13/9/2016 11:39AM

FOLIO: 11/1159973

First Title(s): OLD SYSTEM
Prior Title(s): 1/1095946

Recorded	Number	Type of Instrument	C.T. Issue
4/3/2011	DP1159973	DEPOSITED PLAN	FOLIO CREATED EDITION 1
25/5/2011	AG243872	TRANSFER	EDITION 2
10/8/2011	AG424375	DEPARTMENTAL DEALING	
25/3/2013	DP1171491	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

jd

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Form: 01T
Release: 4.2
www.lpma.nsw.gov.au

TRANSFER
New South Wales
Real Property Act 1900



AG243872E

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the Registrar to make the Register available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 97020693 2009
Duty: \$10 Trans No: 6254305
Asst details: Transfer in conformity

(A) **TORRENS TITLE**

Refer to Annexure "A"

(B) **LODGED BY**

Document Collection Box 984A	Name, Address or DX, Telephone, and Customer Account Number if any Landcom 123704X DX 28448 Parramatta ph: 02 9841 8600 Reference: LZ/LE/03262	CODES T JT TF TJ TK TW
--	--	---------------------------------

(C) **TRANSFEROR**

THE COMMONWEALTH OF AUSTRALIA ABN 68 706 814 312

(D) **CONSIDERATION**

The transferor acknowledges receipt of the consideration of \$24,640,000.00 and as regards the abovementioned land transfers to the transferee an estate in fee simple.

(E) **ESTATE**

(F) **SHARE TRANSFERRED**

(G)

Encumbrances (if applicable):

(H) **TRANSFEE**

LANDCOM ABN 79 268 260 688

(I)

TENANCY:

DATE 9 May 2011

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Certified correct for the purposes of the Real Property Act 1900 by the authorised officer named below.

Signature of witness:

Signature of authorised officer:

Name of witness:
Address of witness:

Authorised officer's name:
Authority of officer:
Signing on behalf of:

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Certified correct for the purposes of the Real Property Act 1900 by the authorised officer named below.

Signature of witness:

Signature of authorised officer:

Name of witness:
Address of witness:

Authorised officer's name:
Authority of officer:
Signing on behalf of:

(K) The transferees delegate certifies that the cNOS data relevant to this dealing has been submitted and stored under cNOS ID No. 117382 Full name: Lisa Zammit, delegate Signature:

1101

ALL HANDWRITING MUST BE IN BLOCK CAPITALS.

Page 1 of 2

LAND AND PROPERTY MANAGEMENT AUTHORITY

man

Annexure A to TRANSFER

Parties:

COMMONWEALTH OF AUSTRALIA ABN68 706 814 312 (Transferor)
LANDCOM ABN 79 268 260 688 (Transferee)

Dated: 9 May 2011

Torrens Title:

11/1159973 -

12/1159973 -

1/33753 -

1/532379 -

3/1017480 -

4/1017480 -

~~1/1010994~~ 1/1020994 *fw*

2/1020994 -

4/1020994 -

5/1020994 -

6/1020994 -

3/1017480

Samuel
Page 2 of 2

Jonathan Wren



Morris Hayes & Edgar hereby certifies that the information contained in this document has been provided electronically by the Registrar General.

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
13/9/2016 11:38AM

FOLIO: 1196/1171491

First Title(s) : OLD SYSTEM
Prior Title(s) : 11/1159973

Recorded	Number	Type of Instrument	C.T. Issue
25/3/2013	DP1171491	DEPOSITED PLAN	FOLIO CREATED EDITION 1
10/10/2013	DP1171493	DEPOSITED PLAN	EDITION 2
15/12/2014	DP1184495	DEPOSITED PLAN	EDITION 3
13/3/2015	DP1206857	DEPOSITED PLAN	EDITION 4
1/7/2015	DP1184498	DEPOSITED PLAN	FOLIO CANCELLED RESIDUE REMAINS

*** END OF SEARCH ***

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Information provided through Tri-Search an approved LPLNSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3005/1184498

SEARCH DATE	TIME	EDITION NO	DATE
13/9/2016	11:36 AM	1	1/7/2015

LAND

LOT 3005 IN DEPOSITED PLAN 1184498
AT PENRITH
LOCAL GOVERNMENT AREA PENRITH
PARISH OF CASTLEREAGH COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1184498

FIRST SCHEDULE

LANDCOM

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 J38042 RIGHT(S) MORE FULLY SET OUT IN J38042 APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND COMPRISED IN DP104189
- 2 P850417 EASEMENT TO DRAIN WATER APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART SHOWN AS PROPOSED EASEMENT FOR STORMWATER 10 WIDE & VAR. WITHIN LOT 8 IN DP583998

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

PRINTED ON 13/9/2016

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3004/1184498

SEARCH DATE	TIME	EDITION NO	DATE
13/9/2016	11:36 AM	1	1/7/2015

LAND

LOT 3004 IN DEPOSITED PLAN 1184498
AT PENRITH
LOCAL GOVERNMENT AREA PENRITH
PARISH OF CASTLEREAGH COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1184498

FIRST SCHEDULE

LANDCOM

SECOND SCHEDULE (2 NOTIFICATIONS)

- 1 J38042 RIGHT(S) MORE FULLY SET OUT IN J38042 APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND COMPRISED IN DP104189
- 2 P850417 EASEMENT TO DRAIN WATER APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART SHOWN AS PROPOSED EASEMENT FOR STORMWATER 10 WIDE & VAR. WITHIN LOT 8 IN DP583998

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

jd

PRINTED ON 13/9/2016

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Information provided through Tri-Search an approved LPLNSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3003/1184498

SEARCH DATE	TIME	EDITION NO	DATE
13/9/2016	11:36 AM	1	1/7/2015

LAND

LOT 3003 IN DEPOSITED PLAN 1184498
AT PENRITH
LOCAL GOVERNMENT AREA PENRITH
PARISH OF CASTLEREAGH COUNTY OF CUMBERLAND
TITLE DIAGRAM DP1184498

FIRST SCHEDULE

LANDCOM

SECOND SCHEDULE (3 NOTIFICATIONS)

- 1 J38042 RIGHT(S) MORE FULLY SET OUT IN J38042 APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE LAND COMPRISED IN DP104189
- 2 J885861 EASEMENT FOR TRANSMISSION LINE VARIABLE WIDTH AFFECTING THE PART(S) SHOWN SO BURDENED IN THE TITLE DIAGRAM
- 3 P850417 EASEMENT TO DRAIN WATER APPURTENANT TO THE LAND ABOVE DESCRIBED AFFECTING THE PART SHOWN AS PROPOSED EASEMENT FOR STORMWATER 10 WIDE & VAR. WITHIN LOT 8 IN DP583998

NOTATIONS

UNREGISTERED DEALINGS: PP DP1210755.

*** END OF SEARCH ***

jd

PRINTED ON 13/9/2016

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Appendix F: Dangerous Goods Search



SafeWork NSW

SafeWork NSW

92-100 Donnison Street, Gosford, NSW, 2250

Locked Bag 2906, Lisarow, NSW, 2252 |

Customer Service Centre **13 10 50**

licensing@safework.nsw.gov.au | www.safework.nsw.gov.au

Our Ref: D16/672843
Your ref: Anthony Plumb

20 September 2016

Attention: Anthony Plumb
Prensa Pty Ltd
Level 2
115 Military Rd
Neutral bay NSW 2089

Dear Mr Plumb,

RE SITE: Lots 3003, 3004 & 3005 Lord Sheffield Cct Penrith NSW

I refer to your site search request received by SafeWork NSW on 13 September 2016 requesting information on Storage of Hazardous Chemicals for the above site.

A search of the records held by SafeWork NSW has not located any records pertaining to the above mentioned premises.

For further information or if you have any questions, please call our Customer Service Centre on 13 10 50 or email licensing@safework.nsw.gov.au

Yours sincerely,


Brent Jones
Customer Service Officer
Customer Service Centre - Operations
SafeWork NSW

Appendix G: Historical Aerial Photographs

Aerial Photographs

1943

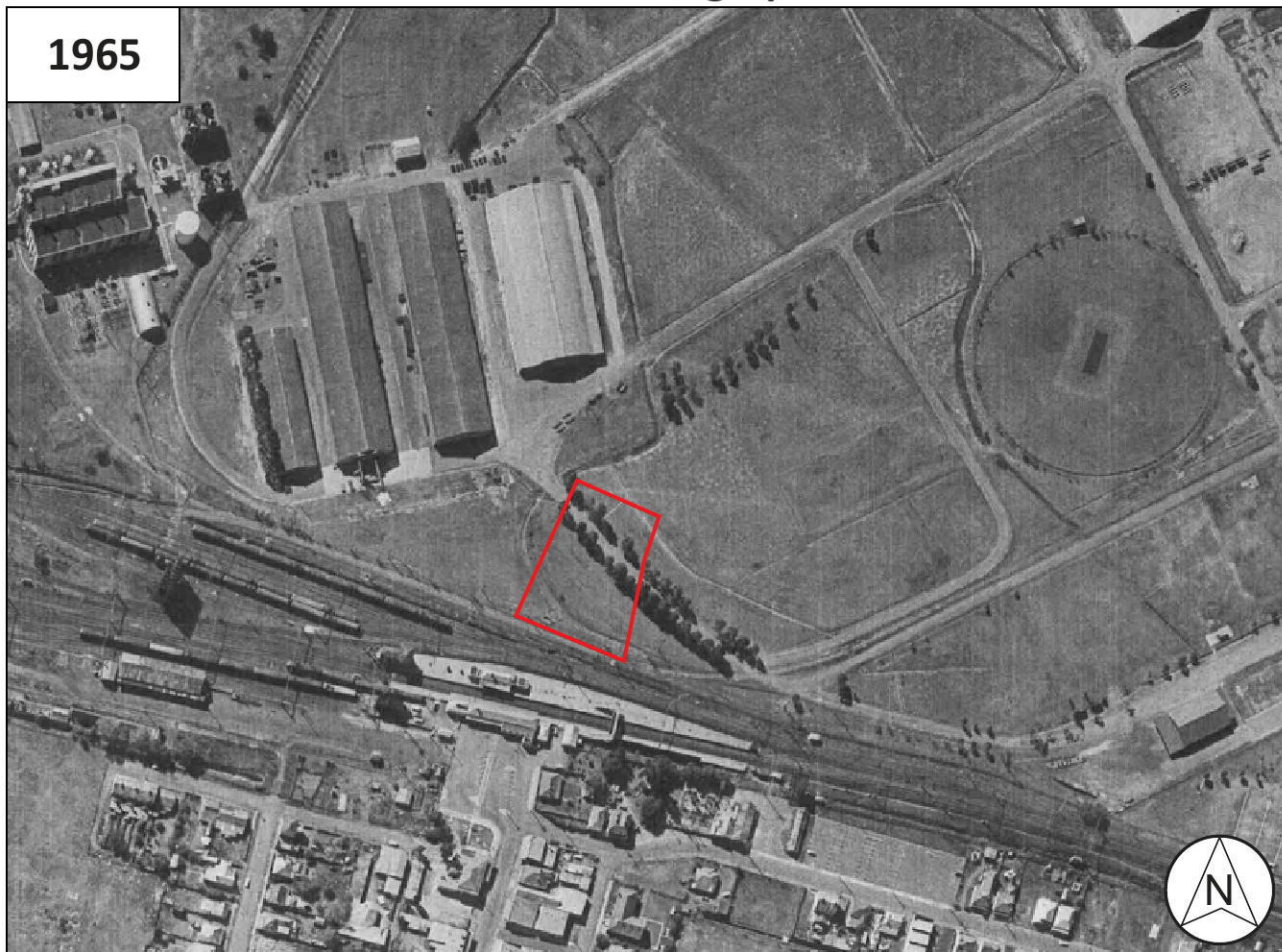


1956



Aerial Photographs

1965



1975



Aerial Photographs

1986



1994

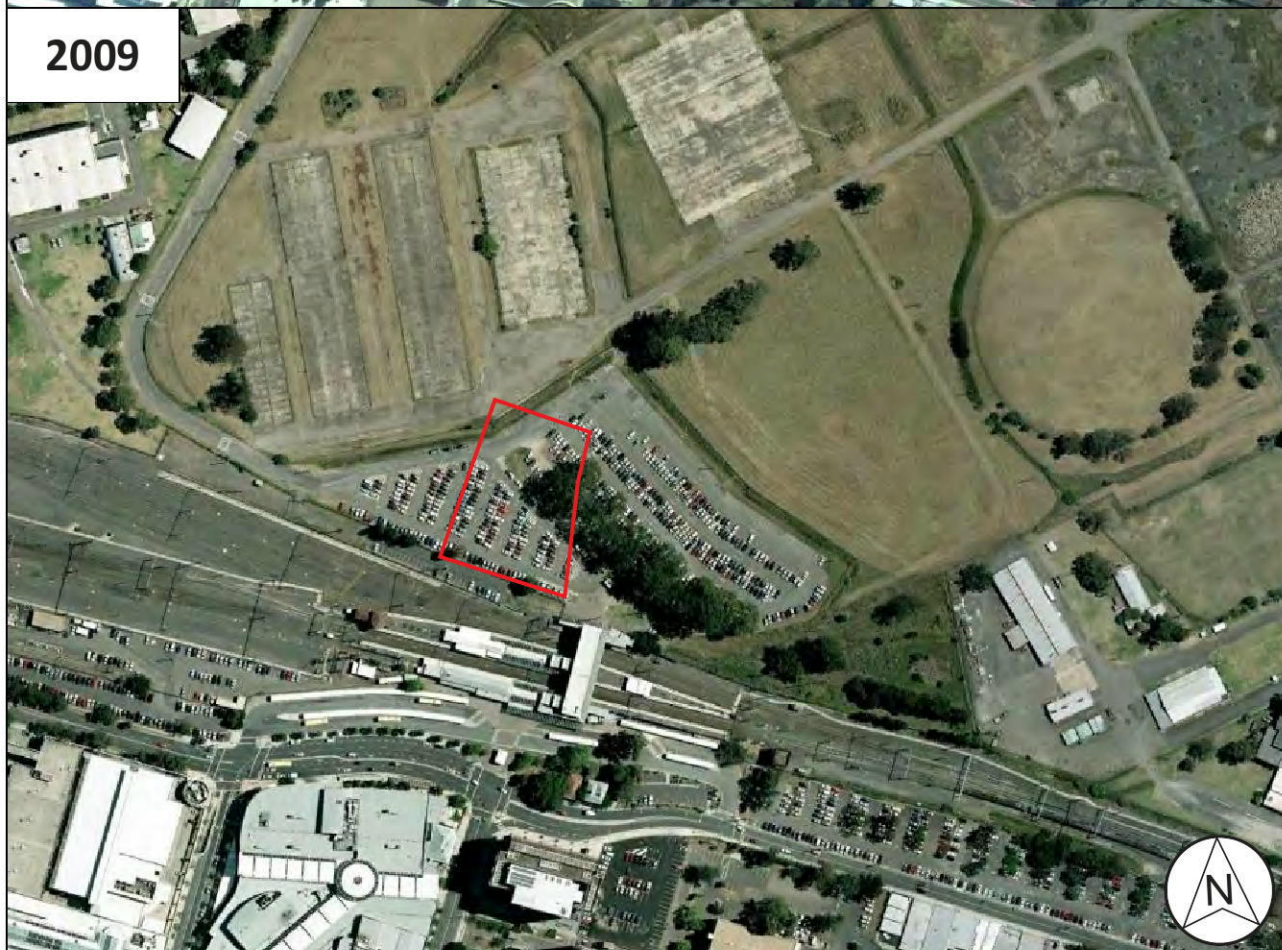


Aerial Photographs

2002



2009



Aerial Photographs



Appendix H: Assessment Criteria

Soil Assessment Criteria

Human Health

Health Investigation Levels (HILs)

HILs were deemed applicable for assessing human health risk via all relevant exposure pathways of exposure for metals and organic substances. HILs are concentrations below which contaminants in soils are not considered to adversely affect human health.

Health Screening Levels (HSLs)

Soil HSLs have been developed for selected petroleum compounds and fractions and were considered applicable to assessing human health risk via vapour intrusion and inhalation. The HSLs depend on specific soil physicochemical properties, land use scenarios, and the characteristics of building structures. They apply to different soil types, and depths below surface to >4 m BGL. Criteria relevant to a sandy soil type and depths of 0 to <1 m were selected as a conservative approach.

Soil HSLs were also adopted from CRC CARE 2011 to assess the exposure pathway of direct contact (oral ingestion, dermal contact and dust inhalation) for commercial / industrial workers and shallow trench workers (maximum trench depth of 1.0 m) and vapour intrusion for intrusive maintenance workers. As a conservative approach, a sandy soil type and depth of 0-<2 m was adopted.

Petroleum Hydrocarbon Management Limits

Petroleum hydrocarbon management limits were considered applicable for validating petroleum hydrocarbons in soil to avoid or minimise the following potential effects of petroleum hydrocarbon contamination:

- Formation of observable light non-aqueous phase liquid (LNAPL);
- Fire and explosion hazards;
- Effects on buried infrastructure (i.e. penetration of, or damage to, in-ground services by hydrocarbons); and
- Aesthetics.

Management limits in coarse soils were conservatively adopted for this ESA as a conservative approach.

Asbestos

A criterion of 0.1g/kg for asbestos identification in soil and non-detection for trace analysis was adopted.

Waste Classification

Reference was made to the criteria provided in the NSW EPA Waste Classification Guidelines 2014 to provide an indication of the classification of soils stockpiled through the central portion of the site, should the excavation and off-site disposal of soil be required in the future. Waste can be classified as:

- General solid waste;
- Restricted solid waste; and
- Hazardous waste.

Chemical contaminants must be compared with the contaminant threshold (CT) values outlined in the NSW EPA Waste Classification Guidelines 2014 before a classification can be determined. If a waste's specific contaminant concentration (SCC) test value exceeds a contaminant threshold, further assessment using toxicity characteristics leaching procedure (TCLP) test may be used. If any SCC or TCLP threshold values specified are exceeded for general solid waste, the waste must be classified as restricted solid waste. If any SCC or TCLP threshold values are exceeded for restricted solid waste, the waste must be classified as hazardous waste.

Appendix I: Laboratory Reports



CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

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

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

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

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

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: Prensa

Contact Person: Nicola Wells

Project Mgr: Anthony Plumb

Sampler: Nicola Wells and Sean Tarnow-Mordi

Address: Level 2, 115 Military Road, Neutral Bay NSW 2089

Phone: 02 8968 2500

Mob: 0426 910 621

Email: Anthony.Plumb@prensa.com.au: Nicola.Wells@prensa.com.au

Client Project Name / Number / Site etc (ie report title):

55494 Lot 3003

PO No.: 55494

Envirolab Quote No. :

Date results required:

Or choose: Standard TAT

Note: Inform lab in advance if urgent turnaround is required - surcharges apply

Report format: Esdat

Lab Comments:

Sample information

Tests Required

Comments

Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Combo Sa	Metals	PAH	Asbestos	Combo S	TRH (V)	BTEX	HOLD							Provide as much information about the sample as you can
1	55494-TP13-0.2	0.2	19.9.16	Soil	X														
2	55494-TP13-0.5	0.5	19.9.16	Soil								XX							
3	55494-TP13-1.3	1.3	19.9.16	Soil								XX							
4	55494-TP13-1.8	1.8	19.9.16	Soil		XX	XX					XX							
5	55494-TP13-2.0	2.0	19.9.16	Soil								XX							
6	55494-TP14-0.2	0.2	20.9.16	Soil								XX							
7	55494-TP14-0.5	0.5	20.9.16	Soil		XX	XX	X											
8	55494-TP14-1.2	1.2	20.9.16	Soil		XX	XX												
9	55494-TP14-1.6	1.6	20.9.16	Soil								X							
10	55494-TP15-0.2	0.2	20.9.16	Soil	X														
11	55494-TP15-0.5	0.5	20.9.16	Soil								X							
12	55494-TP15-1.0	1.0	20.9.16	Soil		XX	XX												
13	55494-TP15-1.4	1.4	20.9.16	Soil								XX							
14	55494-TP16-0.2	0.2	20.9.16	Soil								XX							
15	55494-TP16-0.5	0.5	20.9.16	Soil		XX	XX	X											
16	55494-TP16-1.0	1.0	20.9.16	Soil		XX	XX												
17	55494-TP16-1.5	1.5	20.9.16	Soil								XX							
18	55494-TP17-0.2	0.2	20.9.16	Soil								XX							

Relinquished by (Company): Prensa Pty Ltd

Print Name: Nicola Wells

Date & Time: 21/9/2016 11:10

Signature: [Signature]

Received by (Company): ELS

Print Name: PH

Date & Time: 21/9 1100

Signature: [Signature]

Lab use only:

Samples Received: Cool or Ambient (circle one)

Temperature Received at: (if applicable)

Transported by: Hand delivered / courier

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

Job No:

1539612119

Date Received:

Time Received: 1100

Received by: PH

Temp: Cool/Ambient

Cooling: Ice/Depack

Security: Intact/Broken/None



CHAIN OF CUSTODY - Client

ENVIROLAB GROUP - National phone number 1300 42 43 44

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

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Ph 08 9317 2505 / lab@mpl.com.au

Melbourne Lab - Envirolab Services
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Ph 03 9763 2500 / melbourne@envirolab.com.au

Brisbane Office - Envirolab Services
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Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office - Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: Prensa
Contact Person: Nicola Wells
Project Mgr: Anthony Plumb
Sampler: Nicola Wells and Sean Tarnow-Mordi
Address: Level 2, 115 Military Road, Neutral Bay NSW 2089
Phone: 02 8968 2500 Mob: 0426 910 621
Email: Anthony.Plumb@prensa.com.au; Nicola.Wells@prensa.com.au

Client Project Name / Number / Site etc (ie report title):
55494 Lot 3003
PO No.: 55494
Envirolab Quote No.:
Date results required:
Or choose: Standard TAT
Note: Inform lab in advance if urgent turnaround is required - surcharges apply
Report format: Esdat
Lab Comments:

Sample information

Tests Required

Comments

Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	Combo 5g	Metals	PAH	Asbestos	Combo 5	TEL (v)	BTEX	HOLD							Provide as much information about the sample as you can
19	55494-TP17-0.4	0.4	20.9.16	Soil	X														
20	55494-TP17-0.6	0.6	20.9.16	Soil		X	X												
21	55494-TP17-1.0	1.0	20.9.16	Soil								X							
22	55494-TP18-0.2	0.2	20.9.16	Soil		X	X	X											
23	55494-TP18-0.6	0.6	20.9.16	Soil		X	X												
24	55494-TP18-1.0	1.0	20.9.16	Soil								X							
25	55494-TP19-0.2	0.2	20.9.16	Soil								X							
26	55494-TP19-0.3	0.3	20.9.16	Soil	X														
27	55494-TP19-0.5	0.5	20.9.16	Soil		X	X												
28	55494-TP19-1.0	1.0	20.9.16	Soil								X							
29	55494-TP12-0.2	0.2	20.9.16	Soil								X							
30	55494-TP12-0.5	0.5	20.9.16	Soil		X	X	X											
31	55494-TP12-1.0	1.0	20.9.16	Soil		X	X												
32	55494-TP20-0.2	0.2	20.9.16	Soil		X	X	X											
33	55494-TP20-0.5	0.5	20.9.16	Soil								X							
34	55494-TP20-1.0	1.0	20.9.16	Soil		X	X												
35	55494-TP21-0.2	0.2	20.9.16	Soil								X							
36	55494-TP21-0.5	0.5	20.9.16	Soil	X														

Relinquished by (Company): Prensa Pty Ltd

Print Name: Nicola Wells

Date & Time:

Signature:

Received by (Company): ELS

Print Name: PH

Date & Time: 21/9 1100

Signature:

Lab use only:

Samples Received: Cool or Ambient (circle one)

Temperature Received at: (if applicable)

Transported by: Hand delivered / courier



CHAIN OF CUSTODY - Client

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Ph 03 9763 2500 / melbourne@envirolab.com.au

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Ph 07 3266 9532 / brisbane@envirolab.com.au

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Ph 0406 350 706 / adelaide@envirolab.com.au

Client: Prensa
Contact Person: Nicola Wells
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Phone: 02 8968 2500 Mob: 0426 910 621
Email: Anthony.Plumb@prensa.com.au; Nicola.Wells@prensa.com.au

Client Project Name / Number / Site etc (ie report title):
55494 Lot 3003
PO No.: 55494
Envirolab Quote No. :
Date results required:
Or choose: Standard TAT
Note: Inform lab in advance if urgent turnaround is required - surcharges apply
Report format: Esdat
Lab Comments:

Sample information					Tests Required										Comments
Envirolab Sample ID	Client Sample ID or information	Depth	Date sampled	Type of sample	COMBOSa	Metals	PAH	Asbestos	COMBOS	TRH (u)	BTEX	HOLD			Provide as much information about the sample as you can
N 37	55494-TP21-1.0	1.0	20.9.16	Soil		X	X								
F 38	55494-TP22-0.2	0.2	20.9.16	Soil		X	X	X							
F 39	55494-TP22-0.5	0.5	20.9.16	Soil								X			
N 40	55494-TP22-1.0	1.0	20.9.16	Soil		X	X								
N 41	55494-TP22-1.5	1.5	20.9.16	Soil								X			
F 42	55494-TP23-0.2	0.2	20.9.16	Soil								X			
N 43	55494-TP23-0.5	0.5	20.9.16	Soil	X										
N 44	55494-TP23-1.0	1.0	20.9.16	Soil		X	X								
F 45	55494-TP24-0.2	0.2	20.9.16	Soil		X	X	X							
F 46	55494-TP24-0.5	0.5	20.9.16	Soil								X			
N 47	55494-TP24-1.0	1.0	20.9.16	Soil								X			
F 48	55494-TP25-0.2	0.2	20.9.16	Soil		X	X								
F 49	55494-TP25-0.5	0.5	20.9.16	Soil	X										
N 50	55494-TP25-1.0	1.0	20.9.16	Soil		X	X								
F 51	55494-TP26-0.2	0.2	20.9.16	Soil		X	X	X							
F 52	55494-TP26-0.5	0.5	20.9.16	Soil								X			
N 53	55494-TP26-1.1	1.1	20.9.16	Soil		X	X								
F 54	55494-QC7		20.9.16	Soil					X						

Relinquished by (Company): Prensa Pty Ltd

Print Name: Nicola Wells

Date & Time:

Signature:

Received by (Company): ELS

Print Name: PH

Date & Time: 21/9 1100

Signature:

Lab use only:

Samples Received: Cool or Ambient (circle one)

Temperature Received at: (if applicable)

Transported by: Hand delivered / courier

CHAIN OF CUSTODY - Client

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Sydney Lab - Envirolab Services
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Ph 07 3266 9532 / brisbane@envirolab.com.au

Adelaide Office – Envirolab Services
7a The Parade, Norwood, SA 5067
Ph 0406 350 706 / adelaide@envirolab.com.au

Client: Prensa

Contact Person: Nicola Wells

Project Mgr: Anthony Plumb

Sampler: Nicola Wells and Sean Tarnow-Mordi

Address: Level 2, 115 Military Road, Neutral Bay NSW 2089

Phone: 02 8968 2500

Mob: 0426 910 621

Email: Anthony.Plumb@prensa.com.au: Nicola.Wells@prensa.com.au

Client Project Name / Number / Site etc (ie report title):

55494 Lot 3003

PO No.: 55494

Envirolab Quote No. :

Date results required:

Or choose: Standard TAT

Note: Inform lab in advance if urgent turnaround is required - surcharges apply

Report format: Esdat

Lab Comments:

[illegible]

Relinquished by (Company): Prensa Pty Ltd

Print Name: Nicola Wells

Date & Time:

Signature:

Received by (Company): ELS

Print Name: PH

Date & Time: 21/9. 1000

Signature:

Lab use only:

Samples Received: Cool or Ambient (circle one)

Temperature Received at: (if applicable)

Transported by: Hand delivered / courier



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

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

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

CERTIFICATE OF ANALYSIS

153961

Client:

Prensa Pty Ltd

Level 1, 261-271 Wattletree Rd

Malvern

VIC 3144

Attention: Nicola Wells

Sample log in details:

Your Reference:

55494 Lot 3003

No. of samples:

1 Water, 56 Soils

Date samples received / completed instructions received

21/09/16

/ 21/09/16

Analysis Details:

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

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

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

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

Report Details:

Date results requested by: / Issue Date:

28/09/16

/ 27/09/16

Date of Preliminary Report:

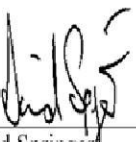
Not Issued

NATA accreditation number 2901. This document shall not be reproduced except in full.

Accredited for compliance with ISO/IEC 17025 - Testing

Tests not covered by NATA are denoted with *.

Results Approved By:



David Springer
General Manager

Envirolab Reference: 153961

Revision No: R 00



Page 1 of 44

vTRH(C6-C10)/BTEXN in Soil	UNITS	153961-1	153961-10	153961-19	153961-26	153961-36
Our Reference:	-----	55494_TP13	55494_TP15	55494_TP17	55494_TP19	55494_TP21
Your Reference	-					
Depth	-----	0.2	0.2	0.4	0.3	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	106	101	100	105	107

vTRH(C6-C10)/BTEXN in Soil	UNITS	153961-43	153961-49	153961-54	153961-55	153961-57
Our Reference:	-----	55494_TP23	55494_TP25	55494_QC7	55494_QC8	55494_TB2
Your Reference	-					
Depth	-----	0.5	0.5	-	-	-
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPH C ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	103	105	100	99	100

svTRH(C10-C40) in Soil Our Reference: Your Reference	UNITS ----- -	153961-1 55494_TP13	153961-10 55494_TP15	153961-19 55494_TP17	153961-26 55494_TP19	153961-36 55494_TP21
Depth	-----	0.2	0.2	0.4	0.3	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate α -Terphenyl	%	94	82	90	91	81

svTRH(C10-C40) in Soil Our Reference: Your Reference	UNITS ----- -	153961-43 55494_TP23	153961-49 55494_TP25	153961-54 55494_QC7	153961-55 55494_QC8	153961-57 55494_TB2
Depth	-----	0.5	0.5	-	-	-
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate α -Terphenyl	%	92	88	80	79	83

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-1 55494_TP13	153961-4 55494_TP13	153961-7 55494_TP14	153961-8 55494_TP14	153961-10 55494_TP15
Depth	-----	0.2	1.8	0.5	1.2	0.2
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Pyrene	mg/kg	0.3	<0.1	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.3	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.2	<0.05	0.06	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	1.9	NIL(+)VE	0.31	NIL(+)VE	NIL(+)VE
Surrogate p-Terphenyl-d14	%	95	91	89	89	89

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-12 55494_TP15	153961-15 55494_TP16	153961-16 55494_TP16	153961-19 55494_TP17	153961-20 55494_TP17
Depth	-----	1.0	0.5	1.0	0.4	0.6
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.4	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.2	<0.1	0.2	0.2
Pyrene	mg/kg	<0.1	0.2	<0.1	0.2	0.2
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1	0.2	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.08	<0.05	0.05	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL(+)VE	0.93	NIL(+)VE	1.2	0.40
Surrogate p-Terphenyl-d14	%	88	87	94	88	94

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-22 55494_TP18	153961-23 55494_TP18	153961-26 55494_TP19	153961-27 55494_TP19	153961-30 55494_TP12
Depth	-----	0.2	0.6	0.3	0.5	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.5	0.3	0.2	<0.1	<0.1
Anthracene	mg/kg	0.2	<0.1	0.2	<0.1	<0.1
Fluoranthene	mg/kg	1.2	0.6	0.8	<0.1	<0.1
Pyrene	mg/kg	1.1	0.5	0.8	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.5	0.2	0.5	<0.1	<0.1
Chrysene	mg/kg	0.6	0.2	0.7	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.8	0.2	1	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.4	0.1	0.54	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	0.3	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.2	<0.1	0.3	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	0.5	<0.5	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	0.5	<0.5	0.9	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	0.5	<0.5	0.9	<0.5	<0.5
Total Positive PAHs	mg/kg	5.8	2.1	5.8	NIL(+)VE	NIL(+)VE
Surrogate p-Terphenyl-d14	%	93	92	88	91	90

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-31 55494_TP12	153961-32 55494_TP20	153961-34 55494_TP20	153961-36 55494_TP21	153961-37 55494_TP21
Depth	-----	1.0	0.2	1.0	0.5	1.0
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL(+)\VE	NIL(+)\VE	NIL(+)\VE	NIL(+)\VE	NIL(+)\VE
Surrogate p-Terphenyl-d14	%	90	91	86	98	92

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-38 55494_TP22	153961-40 55494_TP22	153961-43 55494_TP23	153961-44 55494_TP23	153961-45 55494_TP24
Depth	-----	0.2	1.0	0.5	1.0	0.2
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	NIL(+)\VE	NIL(+)\VE	NIL(+)\VE	NIL(+)\VE	0.11
Surrogate p-Terphenyl-d14	%	99	90	86	87	90

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-48 55494_TP25	153961-49 55494_TP25	153961-50 55494_TP25	153961-51 55494_TP26	153961-53 55494_TP26
Depth	-----	0.2	0.5	1.0	0.2	1.1
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	1.0	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	2.2	<0.1	0.2	<0.1
Pyrene	mg/kg	<0.1	2.2	<0.1	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	1.2	<0.1	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	0.86	<0.05	0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.6	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	1.3	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	1.3	<0.5	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	1.3	<0.5	<0.5	<0.5
Total Positive PAHs	mg/kg	0.05	12	NIL(+)VE	0.43	NIL(+)VE
Surrogate p-Terphenyl-d14	%	92	126	86	88	81

PAHs in Soil Our Reference: Your Reference	UNITS ----- -	153961-54 55494_QC7	153961-55 55494_QC8
Depth Date Sampled Type of sample	----- ----- -----	- 19/09/2016 Soil	- 19/09/2016 Soil
Date extracted	-	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.1
Pyrene	mg/kg	0.1	0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b,j+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.05	0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.5	<0.5
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.5	<0.5
Total Positive PAHs	mg/kg	0.35	0.29
Surrogate <i>p</i> -Terphenyl-d14	%	82	89

Organochlorine Pesticides in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- - -----	153961-1 55494_TP13 0.2 19/09/2016 Soil	153961-10 55494_TP15 0.2 19/09/2016 Soil	153961-19 55494_TP17 0.4 19/09/2016 Soil	153961-26 55494_TP19 0.3 19/09/2016 Soil	153961-36 55494_TP21 0.5 19/09/2016 Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	102	100	105	100	101

Organochlorine Pesticides in soil					
Our Reference:	UNITS	153961-43	153961-49	153961-54	153961-55
Your Reference	-----	55494_TP23	55494_TP25	55494_QC7	55494_QC8
Depth	-	0.5	0.5	-	-
Date Sampled	-----	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	98	98

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	153961-1 55494_TP13	153961-10 55494_TP15	153961-19 55494_TP17	153961-26 55494_TP19	153961-36 55494_TP21
Depth	-----	0.2	0.2	0.4	0.3	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	102	100	105	100	101

PCBs in Soil Our Reference: Your Reference	UNITS ----- -	153961-43 55494_TP23	153961-49 55494_TP25	153961-54 55494_QC7	153961-55 55494_QC8
Depth	-----	0.5	0.5	-	-
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Aroclor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	101	98	98	98

Acid Extractable metals in soil	UNITS	153961-1	153961-4	153961-7	153961-8	153961-10
Our Reference:	-----	55494_TP13	55494_TP13	55494_TP14	55494_TP14	55494_TP15
Your Reference	-					
Depth	-----	0.2	1.8	0.5	1.2	0.2
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	6	<4	8	<4	6
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	17	8	19	11	19
Copper	mg/kg	31	9	25	16	30
Lead	mg/kg	26	6	23	9	30
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	12	4	8	5	12
Zinc	mg/kg	59	12	41	17	49

Acid Extractable metals in soil	UNITS	153961-12	153961-15	153961-16	153961-19	153961-20
Our Reference:	-----	55494_TP15	55494_TP16	55494_TP16	55494_TP17	55494_TP17
Your Reference	-					
Depth	-----	1.0	0.5	1.0	0.4	0.6
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	<4	5	<4	10	4
Cadmium	mg/kg	<0.4	<0.4	<0.4	0.8	<0.4
Chromium	mg/kg	7	12	6	30	10
Copper	mg/kg	8	22	9	25	28
Lead	mg/kg	7	26	5	71	24
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	4	8	3	10	7
Zinc	mg/kg	12	36	11	67	26

Acid Extractable metals in soil	UNITS	153961-22	153961-23	153961-26	153961-27	153961-30
Our Reference:	-----	55494_TP18	55494_TP18	55494_TP19	55494_TP19	55494_TP12
Your Reference	-					
Depth	-----	0.2	0.6	0.3	0.5	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	6	8	7	<4	10
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	14	16	36	12	18
Copper	mg/kg	32	24	17	15	26
Lead	mg/kg	26	29	21	9	22
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	9	12	7	7	8
Zinc	mg/kg	56	40	21	21	40

Acid Extractable metals in soil	UNITS	153961-31	153961-32	153961-34	153961-36	153961-37
Our Reference:	-----	55494_TP12	55494_TP20	55494_TP20	55494_TP21	55494_TP21
Your Reference	-					
Depth	-----	1.0	0.2	1.0	0.5	1.0
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	<4	4	<4	5	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	16	15	15	16
Copper	mg/kg	19	11	13	10	15
Lead	mg/kg	8	13	8	13	8
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	4	7	6	8
Zinc	mg/kg	17	18	17	12	17

Acid Extractable metals in soil	UNITS	153961-38	153961-40	153961-43	153961-44	153961-45
Our Reference:	-----	55494_TP22	55494_TP22	55494_TP23	55494_TP23	55494_TP24
Your Reference	-					
Depth	-----	0.2	1.0	0.5	1.0	0.2
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	<4	<4	5	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	7	15	15	13	14
Copper	mg/kg	5	14	15	17	20
Lead	mg/kg	11	8	21	8	19
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	2	6	5	5	8
Zinc	mg/kg	21	17	17	17	30

Acid Extractable metals in soil	UNITS	153961-48	153961-49	153961-50	153961-51	153961-53
Our Reference:	-----	55494_TP25	55494_TP25	55494_TP25	55494_TP26	55494_TP26
Your Reference	-					
Depth	-----	0.2	0.5	1.0	0.2	1.1
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	<4	10	<4	9	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	12	10	12	14	12
Copper	mg/kg	18	64	11	25	11
Lead	mg/kg	9	76	7	22	7
Mercury	mg/kg	<0.1	0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	9	4	8	6
Zinc	mg/kg	19	84	12	32	16

Acid Extractable metals in soil				
Our Reference:	UNITS	153961-54	153961-55	153961-58
Your Reference	-----	55494_QC7	55494_QC8	55494_TP13- [TRIPLICATE]
Depth	-	-	-	0.2
Date Sampled	-----	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	22/09/2016	22/09/2016	22/09/2016
Arsenic	mg/kg	7	6	8
Cadmium	mg/kg	<0.4	<0.4	<0.4
Chromium	mg/kg	15	16	37
Copper	mg/kg	26	28	24
Lead	mg/kg	24	24	23
Mercury	mg/kg	<0.1	<0.1	<0.1
Nickel	mg/kg	10	12	10
Zinc	mg/kg	52	52	47

Moisture Our Reference: Your Reference	UNITS ----- -	153961-1 55494_TP13	153961-4 55494_TP13	153961-7 55494_TP14	153961-8 55494_TP14	153961-10 55494_TP15
Depth Date Sampled Type of sample	----- 	0.2 19/09/2016 Soil	1.8 19/09/2016 Soil	0.5 19/09/2016 Soil	1.2 19/09/2016 Soil	0.2 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	16	8.1	18	19	22

Moisture Our Reference: Your Reference	UNITS ----- -	153961-12 55494_TP15	153961-15 55494_TP16	153961-16 55494_TP16	153961-19 55494_TP17	153961-20 55494_TP17
Depth Date Sampled Type of sample	----- 	1.0 19/09/2016 Soil	0.5 19/09/2016 Soil	1.0 19/09/2016 Soil	0.4 19/09/2016 Soil	0.6 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	10	9.0	11	17	15

Moisture Our Reference: Your Reference	UNITS ----- -	153961-22 55494_TP18	153961-23 55494_TP18	153961-26 55494_TP19	153961-27 55494_TP19	153961-30 55494_TP12
Depth Date Sampled Type of sample	----- 	0.2 19/09/2016 Soil	0.6 19/09/2016 Soil	0.3 19/09/2016 Soil	0.5 19/09/2016 Soil	0.5 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	21	16	9.5	15	14

Moisture Our Reference: Your Reference	UNITS ----- -	153961-31 55494_TP12	153961-32 55494_TP20	153961-34 55494_TP20	153961-36 55494_TP21	153961-37 55494_TP21
Depth Date Sampled Type of sample	----- 	1.0 19/09/2016 Soil	0.2 19/09/2016 Soil	1.0 19/09/2016 Soil	0.5 19/09/2016 Soil	1.0 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	19	7.1	16	10	13

Moisture Our Reference: Your Reference	UNITS ----- -	153961-38 55494_TP22	153961-40 55494_TP22	153961-43 55494_TP23	153961-44 55494_TP23	153961-45 55494_TP24
Depth Date Sampled Type of sample	----- 	0.2 19/09/2016 Soil	1.0 19/09/2016 Soil	0.5 19/09/2016 Soil	1.0 19/09/2016 Soil	0.2 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	9.8	17	18	15	17

Moisture Our Reference: Your Reference	UNITS ----- -	153961-48 55494_TP25	153961-49 55494_TP25	153961-50 55494_TP25	153961-51 55494_TP26	153961-53 55494_TP26
Depth Date Sampled Type of sample	----- 	0.2 19/09/2016 Soil	0.5 19/09/2016 Soil	1.0 19/09/2016 Soil	0.2 19/09/2016 Soil	1.1 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016	22/09/2016	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016	23/09/2016	23/09/2016	23/09/2016
Moisture	%	16	16	13	15	10

Moisture Our Reference: Your Reference	UNITS ----- -	153961-54 55494_QC7	153961-55 55494_QC8
Depth Date Sampled Type of sample	----- 	- 19/09/2016 Soil	- 19/09/2016 Soil
Date prepared	-	22/09/2016	22/09/2016
Date analysed	-	23/09/2016	23/09/2016
Moisture	%	17	17

Asbestos ID - soils Our Reference: Your Reference	UNITS ----- -	153961-1 55494_TP13	153961-7 55494_TP14	153961-10 55494_TP15	153961-15 55494_TP16	153961-19 55494_TP17
Depth	-----	0.2	0.5	0.2	0.5	0.4
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Sample mass tested	g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 35g	Approx. 20g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils Our Reference: Your Reference	UNITS ----- -	153961-22 55494_TP18	153961-26 55494_TP19	153961-30 55494_TP12	153961-32 55494_TP20	153961-36 55494_TP21
Depth	-----	0.2	0.3	0.5	0.2	0.5
Date Sampled		19/09/2016	19/09/2016	19/09/2016	19/09/2016	19/09/2016
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Sample mass tested	g	Approx. 20g	Approx. 30g	Approx. 30g	Approx. 55g	Approx. 30g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

Asbestos ID - soils Our Reference: Your Reference	UNITS ----- -	153961-38 55494_TP22	153961-43 55494_TP23	153961-45 55494_TP24	153961-49 55494_TP25	153961-51 55494_TP26
Depth Date Sampled Type of sample	----- ----- -----	0.2 19/09/2016 Soil	0.5 19/09/2016 Soil	0.2 19/09/2016 Soil	0.5 19/09/2016 Soil	0.2 19/09/2016 Soil
Date analysed	-	27/09/2016	27/09/2016	27/09/2016	27/09/2016	27/09/2016
Sample mass tested	g	Approx. 40g	Approx. 30g	Approx. 45g	Approx. 35g	Approx. 25g
Sample Description	-	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks	Brown coarse-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected

vTRH(C6-C10)/BTEXNinWater Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- - -----	153961-56 55494_RB2 - 19/09/2016 Water
Date extracted	-	21/09/2016
Date analysed	-	21/09/2016
TRHC ₆ - C ₉	µg/L	<10
TRH C ₆ - C ₁₀	µg/L	<10
TRHC ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	100
Surrogate 4-BFB	%	113

svTRH(C10-C40)in Water		
Our Reference:	UNITS	153961-56
Your Reference	-----	55494_RB2
	-	
Depth	-----	-
Date Sampled		19/09/2016
Type of sample		Water
Date extracted	-	22/09/2016
Date analysed	-	22/09/2016
TRHC ₁₀ - C ₁₄	µg/L	<50
TRHC ₁₅ - C ₂₈	µg/L	<100
TRHC ₂₉ - C ₃₆	µg/L	<100
TRH>C ₁₀ - C ₁₆	µg/L	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50
TRH>C ₁₆ - C ₃₄	µg/L	<100
TRH>C ₃₄ - C ₄₀	µg/L	<100
Surrogate α-Terphenyl	%	78

PAHs in Water Our Reference: Your Reference	UNITS ----- -	153961-56 55494_RB2
Depth Date Sampled Type of sample	----- - 19/09/2016 Water	
Date extracted	-	22/09/2016
Date analysed	-	22/09/2016
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b,j+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate <i>p</i> -Terphenyl-d14	%	86

OCP in water Our Reference: Your Reference	UNITS ----- -	153961-56 55494_RB2
Depth Date Sampled Type of sample	----- - 19/09/2016 Water	
Date extracted	-	22/09/2016
Date analysed	-	22/09/2016
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	121

PCBs in Water Our Reference: Your Reference	UNITS ----- -	153961-56 55494_RB2
Depth Date Sampled Type of sample	----- - 19/09/2016 Water	
Date extracted	-	22/09/2016
Date analysed	-	22/09/2016
Aroclor 1016	µg/L	<2
Aroclor 1221	µg/L	<2
Aroclor 1232	µg/L	<2
Aroclor 1242	µg/L	<2
Aroclor 1248	µg/L	<2
Aroclor 1254	µg/L	<2
Aroclor 1260	µg/L	<2
Surrogate TCLMX	%	121

Metals in Water - Dissolved		
Our Reference:	UNITS	153961-56
Your Reference	-----	55494_RB2
	-	
Depth	-----	-
Date Sampled		19/09/2016
Type of sample		Water
Date digested	-	22/09/2016
Date analysed	-	22/09/2016
Arsenic - Dissolved	mg/L	<0.05
Cadmium- Dissolved	mg/L	<0.01
Chromium- Dissolved	mg/L	<0.01
Copper - Dissolved	mg/L	<0.01
Lead - Dissolved	mg/L	<0.03
Mercury - Dissolved	mg/L	<0.0005
Nickel - Dissolved	mg/L	<0.02
Zinc - Dissolved	mg/L	<0.02

MethodID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore "Total +ve PAHs" is simply a sum of the positive individual PAHs.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-020	Determination of various metals by ICP-AES.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD
Date extracted	-			22/09/2016	153961-1	22/09/2016 22/09/2016
Date analysed	-			23/09/2016	153961-1	23/09/2016 23/09/2016
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	153961-1	<25 <25
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	153961-1	<25 <25
Benzene	mg/kg	0.2	Org-016	<0.2	153961-1	<0.2 <0.2
Toluene	mg/kg	0.5	Org-016	<0.5	153961-1	<0.5 <0.5
Ethylbenzene	mg/kg	1	Org-016	<1	153961-1	<1 <1
m+p-xylene	mg/kg	2	Org-016	<2	153961-1	<2 <2
o-Xylene	mg/kg	1	Org-016	<1	153961-1	<1 <1
naphthalene	mg/kg	1	Org-014	<1	153961-1	<1 <1
Surrogate aaa-Trifluorotoluene	%		Org-016	113	153961-1	106 106 RPD: 0
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
svTRH(C10-C40) in Soil						Base II Duplicate II %RPD
Date extracted	-			22/09/2016	153961-1	22/09/2016 22/09/2016
Date analysed	-			22/09/2016	153961-1	23/09/2016 23/09/2016
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	153961-1	<50 <50
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	153961-1	<100 <100
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	153961-1	<100 <100
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	153961-1	<50 <50
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	153961-1	<100 <100
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	153961-1	<100 <100
Surrogate o-Terphenyl	%		Org-003	92	153961-1	94 81 RPD: 15
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
PAHs in Soil						Base II Duplicate II %RPD
Date extracted	-			22/09/2016	153961-1	22/09/2016 22/09/2016
Date analysed	-			22/09/2016	153961-1	22/09/2016 22/09/2016
Naphthalene	mg/kg	0.1	Org-012	<0.1	153961-1	<0.1 <0.1
Acenaphthylene	mg/kg	0.1	Org-012	<0.1	153961-1	0.2 <0.1
Acenaphthene	mg/kg	0.1	Org-012	<0.1	153961-1	<0.1 <0.1
Fluorene	mg/kg	0.1	Org-012	<0.1	153961-1	<0.1 <0.1
Phenanthrene	mg/kg	0.1	Org-012	<0.1	153961-1	0.1 <0.1
Anthracene	mg/kg	0.1	Org-012	<0.1	153961-1	<0.1 <0.1
Fluoranthene	mg/kg	0.1	Org-012	<0.1	153961-1	0.2 <0.1
Pyrene	mg/kg	0.1	Org-012	<0.1	153961-1	0.3 <0.1
Benzo(a)anthracene	mg/kg	0.1	Org-012	<0.1	153961-1	0.2 <0.1
Chrysene	mg/kg	0.1	Org-012	<0.1	153961-1	0.2 <0.1
Benzo(b,j+k)fluoranthene	mg/kg	0.2	Org-012	<0.2	153961-1	0.3 <0.2

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
PAHs in Soil						Base II Duplicate II %RPD
Benzo(a)pyrene	mg/kg	0.05	Org-012	<0.05	153961-1	0.2 <0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012	<0.1	153961-1	0.1 <0.1
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012	<0.1	153961-1	<0.1 <0.1
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012	<0.1	153961-1	0.2 <0.1
Surrogate p-Terphenyl-d14	%		Org-012	91	153961-1	95 92 RPD: 3
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results
Organochlorine Pesticides in soil						Base II Duplicate II %RPD
Date extracted	-			22/09/2016	153961-1	22/09/2016 22/09/2016
Date analysed	-			22/09/2016	153961-1	22/09/2016 22/09/2016
HCB	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
alpha-BHC	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
gamma-BHC	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
beta-BHC	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Heptachlor	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
delta-BHC	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Aldrin	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Endosulfan I	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
pp-DDE	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Dieldrin	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Endrin	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
pp-DDD	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Endosulfan II	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
pp-DDT	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Methoxychlor	mg/kg	0.1	Org-005	<0.1	153961-1	<0.1 <0.1
Surrogate TCMX	%		Org-005	130	153961-1	102 110 RPD: 8

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results		
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			22/09/2016	153961-1	22/09/2016 22/09/2016		
Date analysed	-			22/09/2016	153961-1	22/09/2016 22/09/2016		
Aroclor 1016	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1221	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1232	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1242	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1248	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1254	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Aroclor 1260	mg/kg	0.1	Org-006	<0.1	153961-1	<0.1 <0.1		
Surrogate TCLMX	%		Org-006	130	153961-1	102 110 RPD: 8		
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results		
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date prepared	-			22/09/2016	153961-1	22/09/2016 22/09/2016		
Date analysed	-			22/09/2016	153961-1	22/09/2016 22/09/2016		
Arsenic	mg/kg	4	Metals-020	<4	153961-1	6 6 RPD: 0		
Cadmium	mg/kg	0.4	Metals-020	<0.4	153961-1	<0.4 <0.4		
Chromium	mg/kg	1	Metals-020	<1	153961-1	17 35 RPD: 69		
Copper	mg/kg	1	Metals-020	<1	153961-1	31 21 RPD: 38		
Lead	mg/kg	1	Metals-020	<1	153961-1	26 20 RPD: 26		
Mercury	mg/kg	0.1	Metals-021	<0.1	153961-1	<0.1 <0.1		
Nickel	mg/kg	1	Metals-020	<1	153961-1	12 10 RPD: 18		
Zinc	mg/kg	1	Metals-020	<1	153961-1	59 47 RPD: 23		
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Water						Base II Duplicate II %RPD		
Date extracted	-			21/09/2016	[NT]	[NT]	LCS-W1	21/09/2016
Date analysed	-			21/09/2016	[NT]	[NT]	LCS-W1	21/09/2016
TRHC ₆ - C ₉	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	114%
TRHC ₆ - C ₁₀	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	114%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	110%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	111%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	111%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	119%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	119%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate	%		Org-016	102	[NT]	[NT]	LCS-W1	100%
Dibromofluoromethane								
Surrogate toluene-d8	%		Org-016	100	[NT]	[NT]	LCS-W1	101%
Surrogate 4-BFB	%		Org-016	112	[NT]	[NT]	LCS-W1	105%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40)in Water						Base II Duplicate II %RPD		
Date extracted	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Date analysed	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
TRHC ₁₀ - C ₁₄	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	122%
TRHC ₁₅ - C ₂₈	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	125%
TRHC ₂₉ - C ₃₆	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	83%
TRH>C ₁₀ - C ₁₆	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	122%
TRH>C ₁₆ - C ₃₄	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	125%
TRH>C ₃₄ - C ₄₀	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	83%
Surrogate o-Terphenyl	%		Org-003	90	[NT]	[NT]	LCS-W1	105%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Date extracted	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Date analysed	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Naphthalene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	72%
Acenaphthylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	80%
Phenanthrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	82%
Anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	79%
Pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	80%
Benzo(a)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Benzo(b,j+k)fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	LCS-W1	88%
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	Org-012	<1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	102	[NT]	[NT]	LCS-W1	84%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
OCP in water						Base II Duplicate II %RPD		
Date extracted	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Date analysed	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	96%
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	89%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	99%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	92%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	93%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	91%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	95%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	98%
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	91%
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	97%
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	130	[NT]	[NT]	LCS-W1	130%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Water						Base II Duplicate II %RPD		
Date extracted	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Date analysed	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Aroclor 1016	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	µg/L	2	Org-006	<2	[NT]	[NT]	LCS-W1	76%
Aroclor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	130	[NT]	[NT]	LCS-W1	125%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in Water - Dissolved						Base II Duplicate II %RPD		
Date digested	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Date analysed	-			22/09/2016	[NT]	[NT]	LCS-W1	22/09/2016
Arsenic - Dissolved	mg/L	0.05	Metals-020	<0.05	[NT]	[NT]	LCS-W1	101%
Cadmium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	LCS-W1	104%
Chromium - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	LCS-W1	97%
Copper - Dissolved	mg/L	0.01	Metals-020	<0.01	[NT]	[NT]	LCS-W1	100%
Lead - Dissolved	mg/L	0.03	Metals-020	<0.03	[NT]	[NT]	LCS-W1	105%
Mercury - Dissolved	mg/L	0.0005	Metals-021	<0.0005	[NT]	[NT]	LCS-W1	101%
Nickel - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	LCS-W1	101%
Zinc - Dissolved	mg/L	0.02	Metals-020	<0.02	[NT]	[NT]	LCS-W1	100%
QUALITYCONTROL	UNITS	Dup. Sm#		Duplicate		Spike Sm#	Spike % Recovery	
vTRH(C6-C10)/BTEX in Soil				Base + Duplicate + %RPD				
Date extracted	-	[NT]		[NT]		LCS-4	22/09/2016	
Date analysed	-	[NT]		[NT]		LCS-4	23/09/2016	
TRHC ₆ - C ₉	mg/kg	[NT]		[NT]		LCS-4	93%	
TRHC ₆ - C ₁₀	mg/kg	[NT]		[NT]		LCS-4	93%	
Benzene	mg/kg	[NT]		[NT]		LCS-4	84%	
Toluene	mg/kg	[NT]		[NT]		LCS-4	89%	
Ethylbenzene	mg/kg	[NT]		[NT]		LCS-4	92%	
m+p-xylene	mg/kg	[NT]		[NT]		LCS-4	101%	
o-Xylene	mg/kg	[NT]		[NT]		LCS-4	95%	
naphthalene	mg/kg	[NT]		[NT]		[NR]	[NR]	
Surrogate aaa-Trifluorotoluene	%	[NT]		[NT]		LCS-4	109%	

QUALITYCONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	SpikeSm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-4	22/09/2016
Date analysed	-	[NT]	[NT]	LCS-4	22/09/2016
TRHC ₁₀ - C ₁₄	mg/kg	[NT]	[NT]	LCS-4	123%
TRHC ₁₅ - C ₂₈	mg/kg	[NT]	[NT]	LCS-4	120%
TRHC ₂₉ - C ₃₆	mg/kg	[NT]	[NT]	LCS-4	96%
TRH > C ₁₀ - C ₁₆	mg/kg	[NT]	[NT]	LCS-4	123%
TRH > C ₁₆ - C ₃₄	mg/kg	[NT]	[NT]	LCS-4	120%
TRH > C ₃₄ - C ₄₀	mg/kg	[NT]	[NT]	LCS-4	96%
Surrogate o-Terphenyl	%	[NT]	[NT]	LCS-4	117%
QUALITYCONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	SpikeSm#	Spike % Recovery
Date extracted	-	153961-27	22/09/2016 22/09/2016	LCS-4	22/09/2016
Date analysed	-	153961-27	22/09/2016 22/09/2016	LCS-4	22/09/2016
Naphthalene	mg/kg	153961-27	<0.1 <0.1	LCS-4	96%
Acenaphthylene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	153961-27	<0.1 <0.1	LCS-4	108%
Phenanthrene	mg/kg	153961-27	<0.1 <0.1	LCS-4	111%
Anthracene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153961-27	<0.1 <0.1	LCS-4	101%
Pyrene	mg/kg	153961-27	<0.1 <0.1	LCS-4	105%
Benzo(a)anthracene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	153961-27	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153961-27	<0.05 <0.05	LCS-4	92%
Indeno(1,2,3-c,d)pyrene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	153961-27	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	153961-27	91 98 RPD: 7	LCS-4	132%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-4	22/09/2016
Date analysed	-	[NT]	[NT]	LCS-4	22/09/2016
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	LCS-4	100%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	LCS-4	93%
Heptachlor	mg/kg	[NT]	[NT]	LCS-4	101%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	LCS-4	96%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	LCS-4	96%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	LCS-4	93%
Dieldrin	mg/kg	[NT]	[NT]	LCS-4	98%
Endrin	mg/kg	[NT]	[NT]	LCS-4	99%
pp-DDD	mg/kg	[NT]	[NT]	LCS-4	92%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	LCS-4	90%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	LCS-4	94%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	LCS-4	22/09/2016
Date analysed	-	[NT]	[NT]	LCS-4	22/09/2016
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	LCS-4	93%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	LCS-4	100%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153961-27	22/09/2016 22/09/2016	LCS-4	22/09/2016
Date analysed	-	153961-27	22/09/2016 22/09/2016	LCS-4	22/09/2016
Arsenic	mg/kg	153961-27	<4 <4	LCS-4	110%
Cadmium	mg/kg	153961-27	<0.4 <0.4	LCS-4	100%
Chromium	mg/kg	153961-27	12 13 RPD: 8	LCS-4	110%
Copper	mg/kg	153961-27	15 15 RPD: 0	LCS-4	110%
Lead	mg/kg	153961-27	9 10 RPD: 11	LCS-4	106%
Mercury	mg/kg	153961-27	<0.1 <0.1	LCS-4	96%
Nickel	mg/kg	153961-27	7 7 RPD: 0	LCS-4	105%
Zinc	mg/kg	153961-27	21 21 RPD: 0	LCS-4	106%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153961-44	22/09/2016 22/09/2016	LCS-5	22/09/2016
Date analysed	-	153961-44	22/09/2016 22/09/2016	LCS-5	22/09/2016
Naphthalene	mg/kg	153961-44	<0.1 <0.1	LCS-5	97%
Acenaphthylene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	153961-44	<0.1 <0.1	LCS-5	107%
Phenanthrene	mg/kg	153961-44	<0.1 <0.1	LCS-5	109%
Anthracene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153961-44	<0.1 <0.1	LCS-5	101%
Pyrene	mg/kg	153961-44	<0.1 <0.1	LCS-5	103%
Benzo(a)anthracene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Benzo(b,j,k)fluoranthene	mg/kg	153961-44	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153961-44	<0.05 <0.05	LCS-5	90%
Indeno(1,2,3-c,d)pyrene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	153961-44	<0.1 <0.1	[NR]	[NR]

QUALITYCONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
<i>Surrogate p</i> -Terphenyl-d14	%	153961-44	87 89 RPD: 2	LCS-5	131%
QUALITYCONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153961-44	22/09/2016 22/09/2016	LCS-5	22/09/2016
Date analysed	-	153961-44	22/09/2016 22/09/2016	LCS-5	22/09/2016
Arsenic	mg/kg	153961-44	<4 5	LCS-5	112%
Cadmium	mg/kg	153961-44	<0.4 <0.4	LCS-5	99%
Chromium	mg/kg	153961-44	13 16 RPD: 21	LCS-5	110%
Copper	mg/kg	153961-44	17 20 RPD: 16	LCS-5	111%
Lead	mg/kg	153961-44	8 10 RPD: 22	LCS-5	107%
Mercury	mg/kg	153961-44	<0.1 <0.1	LCS-5	96%
Nickel	mg/kg	153961-44	5 7 RPD: 33	LCS-5	104%
Zinc	mg/kg	153961-44	17 19 RPD: 11	LCS-5	106%
QUALITYCONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153961-10	22/09/2016
Date analysed	-	[NT]	[NT]	153961-10	23/09/2016
TRHC ₆ - C ₉	mg/kg	[NT]	[NT]	153961-10	81%
TRHC ₆ - C ₁₀	mg/kg	[NT]	[NT]	153961-10	81%
Benzene	mg/kg	[NT]	[NT]	153961-10	73%
Toluene	mg/kg	[NT]	[NT]	153961-10	76%
Ethylbenzene	mg/kg	[NT]	[NT]	153961-10	79%
m+p-xylene	mg/kg	[NT]	[NT]	153961-10	88%
o-Xylene	mg/kg	[NT]	[NT]	153961-10	82%
naphthalene	mg/kg	[NT]	[NT]	[NR]	[NR]
<i>Surrogate aaa</i> - Trifluorotoluene	%	[NT]	[NT]	153961-10	93%

QUALITYCONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153961-10	22/09/2016
Date analysed	-	[NT]	[NT]	153961-10	23/09/2016
TRHC ₁₀ - C ₁₄	mg/kg	[NT]	[NT]	153961-10	108%
TRHC ₁₅ - C ₂₈	mg/kg	[NT]	[NT]	153961-10	102%
TRHC ₂₉ - C ₃₆	mg/kg	[NT]	[NT]	153961-10	96%
TRH > C ₁₀ - C ₁₆	mg/kg	[NT]	[NT]	153961-10	108%
TRH > C ₁₆ - C ₃₄	mg/kg	[NT]	[NT]	153961-10	102%
TRH > C ₃₄ - C ₄₀	mg/kg	[NT]	[NT]	153961-10	96%
Surrogate o-Terphenyl	%	[NT]	[NT]	153961-10	82%
QUALITYCONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	153961-53	22/09/2016 22/09/2016	153961-10	22/09/2016
Date analysed	-	153961-53	22/09/2016 22/09/2016	153961-10	22/09/2016
Naphthalene	mg/kg	153961-53	<0.1 <0.1	153961-10	90%
Acenaphthylene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	153961-53	<0.1 <0.1	153961-10	95%
Phenanthrene	mg/kg	153961-53	<0.1 <0.1	153961-10	96%
Anthracene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	153961-53	<0.1 <0.1	153961-10	86%
Pyrene	mg/kg	153961-53	<0.1 <0.1	153961-10	93%
Benzo(a)anthracene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Benzo(b,j+k)fluoranthene	mg/kg	153961-53	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	153961-53	<0.05 <0.05	153961-10	81%
Indeno(1,2,3-c,d)pyrene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	153961-53	<0.1 <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	153961-53	81 88 RPD: 8	153961-10	126%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153961-10	22/09/2016
Date analysed	-	[NT]	[NT]	153961-10	22/09/2016
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	153961-10	100%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	153961-10	90%
Heptachlor	mg/kg	[NT]	[NT]	153961-10	100%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	153961-10	95%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	153961-10	94%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	153961-10	93%
Dieldrin	mg/kg	[NT]	[NT]	153961-10	97%
Endrin	mg/kg	[NT]	[NT]	153961-10	98%
pp-DDD	mg/kg	[NT]	[NT]	153961-10	92%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	mg/kg	[NT]	[NT]	153961-10	93%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	153961-10	94%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153961-10	22/09/2016
Date analysed	-	[NT]	[NT]	153961-10	22/09/2016
Aroclor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Aroclor 1254	mg/kg	[NT]	[NT]	153961-10	96%
Aroclor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	153961-10	94%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	153961-53	22/09/2016 22/09/2016	153961-10	22/09/2016
Date analysed	-	153961-53	22/09/2016 22/09/2016	153961-10	22/09/2016
Arsenic	mg/kg	153961-53	<4 <4	153961-10	94%
Cadmium	mg/kg	153961-53	<0.4 <0.4	153961-10	88%
Chromium	mg/kg	153961-53	12 12 RPD: 0	153961-10	97%
Copper	mg/kg	153961-53	11 11 RPD: 0	153961-10	100%
Lead	mg/kg	153961-53	7 8 RPD: 13	153961-10	88%
Mercury	mg/kg	153961-53	<0.1 <0.1	153961-10	100%
Nickel	mg/kg	153961-53	6 6 RPD: 0	153961-10	91%
Zinc	mg/kg	153961-53	16 17 RPD: 6	153961-10	83%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	153961-45	22/09/2016
Date analysed	-	[NT]	[NT]	153961-45	22/09/2016
Naphthalene	mg/kg	[NT]	[NT]	153961-45	93%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	153961-45	103%
Phenanthrene	mg/kg	[NT]	[NT]	153961-45	102%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	153961-45	93%
Pyrene	mg/kg	[NT]	[NT]	153961-45	100%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(b,j,k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	153961-45	80%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]

Client Reference: 55494 Lot 3003

QUALITYCONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
<i>Surrogate p</i> -Terphenyl-d14	%	[NT]	[NT]	153961-45	107%
QUALITYCONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	153961-45	22/09/2016
Date analysed	-	[NT]	[NT]	153961-45	22/09/2016
Arsenic	mg/kg	[NT]	[NT]	153961-45	91%
Cadmium	mg/kg	[NT]	[NT]	153961-45	90%
Chromium	mg/kg	[NT]	[NT]	153961-45	104%
Copper	mg/kg	[NT]	[NT]	153961-45	113%
Lead	mg/kg	[NT]	[NT]	153961-45	85%
Mercury	mg/kg	[NT]	[NT]	153961-45	91%
Nickel	mg/kg	[NT]	[NT]	153961-45	92%
Zinc	mg/kg	[NT]	[NT]	153961-45	90%

Report Comments:

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteria has been exceeded for 153961-1 for Cr. Therefore a triplicate result has been issued as laboratory sample number 153961-58.

Asbestos: Excessive sample volume was provided for asbestos analysis. A portion of the supplied sample was sub-sampled according to the laboratory method. We cannot guarantee that this sub-sample is indicative of the entire sample.

EnviroLab recommends supplying 40-50g (50mL) of sample in its own container as per AS4964-2004.

Note: All samples analysed for asbestos were sub-sampled from bags provided by the client.

Asbestos ID was analysed by Approved Identifier: Matt Mansfield

Asbestos ID was authorised by Approved Signatory: Matt Mansfield

INS: Insufficient sample for this test

NR: Test not required

<: Less than

PQL: Practical Quantitation Limit

RPD: Relative Percent Difference

>: Greater than

NT: Not tested

NA: Test not required

LCS: Laboratory Control Sample

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.

Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike: A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.

LCS (Laboratory Control Sample): This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.

Spikes for Physical and Aggregate Tests are not applicable.

For VOCs in water samples, three vials are required for duplicate or spike analysis.

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

Measurement Uncertainty estimates are available for most tests upon request.



CHAIN OF CUSTODY RECORD

ABN 54 005 005 521

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Company		Prensa Pty Ltd		Purchase Order		55494 Lot 3003		Project Manager		Anthony Plumb		Project Name		Penrith ESA	
Address		L2, 115 Military Rd, Neutral Bay NSW 2089		Eurofins mgt Quote No				Project No		55494		Electronic Results Format		EsDAT	
Contact Name		Nicola Wells		Analysis (Note: Where metals are requested, please specify "Total" or "Filterable") Metals, TRH, BTEX, PAH, OCP, PCB								Email for Results		Anthony.Plumb@prensa.com.au Nicola.Wells@prensa.com.au	
Contact Phone No		0426 910 621										Turn Around Requirements		☐ 1 DAY* ☐ 2 DAY* ☐ 3 DAY* ☒ 5 DAY (Sht) ☐ Other () * Surcharges apply	
Special Direction															
Relinquished by		Nicola Wells										Containers		Method of Shipment	
(Signature)		<u>N. Wells</u>										1L Plastic		☒ Courier (#)	
(Time / Date)		11:25 21/9/16										250mL Plastic		☐ Hand Delivered	
												125mL Plastic		☐ Postal	
												200mL Amber Glass			
												40mL Vial			
												125mL Amber Glass			
												Jar			
												Bag for Asbestos			
														Sample Comments / DG Hazard Warning	
No		Client Sample ID		Date		Matrix									
1		55494_QC8		20092016		Soil		X							
2		55494_QC10		20092016		Soil		X							
3															
4															
5															
6															
7															
8															
9															
10															
11															
12															

Laboratory Use Only	Received By	Sean	SYD BNE MEL PER ADL NEW DAR	Date	21/9/16	Time	12:00	Signature		Temperature	
	Received By		SYD BNE MEL PER ADL NEW DAR	Date	___/___/___	Time	___:___	Signature		Report No	516727

Certificate of Analysis

Prensa Pty Ltd NSW
Level 2, 115 Military Road
Neutral Bay
NSW 2089



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: **Anthony Plumb**

Report **516727-S**
Project name PENRITH ESA
Project ID 55494
Received Date Sep 21, 2016

Client Sample ID			55494_QC8	55494_QC10
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S16-Se20334	S16-Se20335
Date Sampled			Sep 20, 2016	Sep 20, 2016
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50
TRH C29-C36	50	mg/kg	94	< 50
TRH C10-36 (Total)	50	mg/kg	94	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	73	74
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			55494_QC8	55494_QC10
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S16-Se20334	S16-Se20335
Date Sampled			Sep 20, 2016	Sep 20, 2016
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	109	114
p-Terphenyl-d14 (surr.)	1	%	123	112
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1
Dibutylchloroendate (surr.)	1	%	95	99
Tetrachloro-m-xylene (surr.)	1	%	104	100
Polychlorinated Biphenyls				
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5
Dibutylchloroendate (surr.)	1	%	95	99
Tetrachloro-m-xylene (surr.)	1	%	104	100
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100

Client Sample ID			55494_QC8	55494_QC10
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S16-Se20334	S16-Se20335
Date Sampled			Sep 20, 2016	Sep 20, 2016
Test/Reference	LOR	Unit		
Heavy Metals				
Arsenic	2	mg/kg	6.6	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	25	18
Copper	5	mg/kg	58	57
Lead	5	mg/kg	49	56
Mercury	0.05	mg/kg	< 0.05	< 0.05
Nickel	5	mg/kg	17	16
Zinc	5	mg/kg	120	74
% Moisture	1	%	23	28

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: TRH C6-C36 - LTM-ORG-2010	Sydney	Sep 26, 2016	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 26, 2016	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 26, 2016	14 Day
BTEX - Method: TRH C6-C40 - LTM-ORG-2010	Sydney	Sep 26, 2016	14 Day
Polycyclic Aromatic Hydrocarbons - Method: E007 Polycyclic Aromatic Hydrocarbons (PAH)	Sydney	Sep 26, 2016	14 Day
Organochlorine Pesticides - Method: E013 Organochlorine Pesticides (OC)	Sydney	Sep 26, 2016	14 Day
Polychlorinated Biphenyls - Method: E013 Polychlorinated Biphenyls (PCB)	Sydney	Sep 26, 2016	28 Day
Metals M8 - Method: LTM-MET-3040_R0 TOTAL AND DISSOLVED METALS AND MERCURY IN WATERS BY ICP-MS	Sydney	Sep 26, 2016	28 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Sep 22, 2016	14 Day

Company Name: Prensa Pty Ltd NSW
Address: Level 2, 115 Military Road
Neutral Bay
NSW 2089
Project Name: PENRITH ESA
Project ID: 55494

Order No.: 55494 Lot 3003
Report #: 516727
Phone: (02) 9033 8634
Fax:

Received: Sep 21, 2016 1:00 PM
Due: Sep 28, 2016
Priority: 5 Day
Contact Name: Anthony Plumb

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794												
External Laboratory												
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID							
1	55494_QC8	Sep 20, 2016		Soil	S16-Se20334	X	X	X	X	X	X	X
2	55494_QC10	Sep 20, 2016		Soil	S16-Se20335	X	X	X	X	X	X	X
Test Counts						2	2	2	2	2	2	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

****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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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/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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	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							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
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	< 0.05			0.05	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	109			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	87			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	98			70-130	Pass	
m&p-Xylenes	%	98			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total	%	98			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	83			70-130	Pass	
TRH C6-C10	%	84			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	106			70-130	Pass	
Acenaphthylene	%	94			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&i)fluoranthene	%	76			70-130	Pass	
Benzo(g,h,i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	119			70-130	Pass	
Chrysene	%	116			70-130	Pass	
Dibenz(a,h)anthracene	%	80			70-130	Pass	
Fluoranthene	%	115			70-130	Pass	
Fluorene	%	98			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	83			70-130	Pass	
Naphthalene	%	111			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	113			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	98			70-130	Pass	
4,4'-DDD	%	103			70-130	Pass	
4,4'-DDE	%	99			70-130	Pass	
4,4'-DDT	%	128			70-130	Pass	
a-BHC	%	99			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-BHC	%	100			70-130	Pass	
d-BHC	%	106			70-130	Pass	
Dieldrin	%	101			70-130	Pass	
Endosulfan I	%	101			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	109			70-130	Pass	
Endrin	%	106			70-130	Pass	
Endrin aldehyde	%	119			70-130	Pass	
Endrin ketone	%	110			70-130	Pass	
g-BHC (Lindane)	%	100			70-130	Pass	
Heptachlor	%	102			70-130	Pass	
Heptachlor epoxide	%	99			70-130	Pass	
Hexachlorobenzene	%	96			70-130	Pass	
Methoxychlor	%	122			70-130	Pass	
Toxaphene	%	127			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	119			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	117			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	105			70-130	Pass	
Cadmium	%	103			70-130	Pass	
Chromium	%	95			70-130	Pass	
Copper	%	112			70-130	Pass	
Lead	%	97			70-130	Pass	
Mercury	%	104			70-130	Pass	
Nickel	%	102			70-130	Pass	
Zinc	%	97			70-130	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 C6-C9	S16-Se20333	NCP	%	94		70-130	Pass	
TRH C10-C14	S16-Se19051	NCP	%	104		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S16-Se20333	NCP	%	87		70-130	Pass	
Toluene	S16-Se20333	NCP	%	103		70-130	Pass	
Ethylbenzene	S16-Se20333	NCP	%	104		70-130	Pass	
m&p-Xylenes	S16-Se20333	NCP	%	105		70-130	Pass	
o-Xylene	S16-Se20333	NCP	%	106		70-130	Pass	
Xylenes - Total	S16-Se20333	NCP	%	106		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	S16-Se20333	NCP	%	85		70-130	Pass	
TRH C6-C10	S16-Se20333	NCP	%	91		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S16-Se22355	NCP	%	107		70-130	Pass	
Acenaphthylene	S16-Se22355	NCP	%	100		70-130	Pass	
Anthracene	S16-Se22355	NCP	%	107		70-130	Pass	
Benz(a)anthracene	S16-Se22355	NCP	%	91		70-130	Pass	
Benzo(a)pyrene	S16-Se22355	NCP	%	80		70-130	Pass	
Benzo(b&j)fluoranthene	S16-Se22355	NCP	%	70		70-130	Pass	
Benzo(g,h,i)perylene	S16-Se22355	NCP	%	71		70-130	Pass	
Benzo(k)fluoranthene	S16-Se22355	NCP	%	95		70-130	Pass	
Chrysene	S16-Se22355	NCP	%	106		70-130	Pass	
Dibenz(a,h)anthracene	S16-Se22355	NCP	%	72		70-130	Pass	
Fluoranthene	S16-Se22355	NCP	%	108		70-130	Pass	
Fluorene	S16-Se22355	NCP	%	101		70-130	Pass	
Indeno(1,2,3-cd)pyrene	S16-Se23737	NCP	%	86		70-130	Pass	
Naphthalene	S16-Se22355	NCP	%	109		70-130	Pass	
Phenanthrene	S16-Se22355	NCP	%	109		70-130	Pass	
Pyrene	S16-Se22355	NCP	%	107		70-130	Pass	
Spike - % Recovery								
Organochlorine Pesticides				Result 1				
Chlordanes - Total	S16-Se20334	CP	%	107		70-130	Pass	
4,4'-DDD	S16-Se20334	CP	%	128		70-130	Pass	
4,4'-DDE	S16-Se20334	CP	%	101		70-130	Pass	
4,4'-DDT	S16-Se17757	NCP	%	128		70-130	Pass	
a-BHC	S16-Se20334	CP	%	97		70-130	Pass	
Aldrin	S16-Se20334	CP	%	101		70-130	Pass	
b-BHC	S16-Se20334	CP	%	97		70-130	Pass	
d-BHC	S16-Se20334	CP	%	110		70-130	Pass	
Dieldrin	S16-Se20334	CP	%	107		70-130	Pass	
Endosulfan I	S16-Se20334	CP	%	103		70-130	Pass	
Endosulfan II	S16-Se20334	CP	%	99		70-130	Pass	
Endosulfan sulphate	S16-Se20334	CP	%	112		70-130	Pass	
Endrin	S16-Se20334	CP	%	105		70-130	Pass	
Endrin aldehyde	S16-Se20334	CP	%	106		70-130	Pass	
Endrin ketone	S16-Se20334	CP	%	99		70-130	Pass	
g-BHC (Lindane)	S16-Se20334	CP	%	95		70-130	Pass	
Heptachlor	S16-Se20334	CP	%	99		70-130	Pass	
Heptachlor epoxide	S16-Se20334	CP	%	102		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	S16-Se20334	CP	%	94			70-130	Pass	
Methoxychlor	S16-Se24350	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S16-Se19051	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S16-Se22354	NCP	%	101			70-130	Pass	
Cadmium	S16-Se22354	NCP	%	101			70-130	Pass	
Chromium	S16-Se22354	NCP	%	92			70-130	Pass	
Copper	S16-Se22354	NCP	%	125			70-130	Pass	
Lead	S16-Se22354	NCP	%	99			70-130	Pass	
Mercury	S16-Se22354	NCP	%	106			70-130	Pass	
Nickel	S16-Se22354	NCP	%	104			70-130	Pass	
Zinc	S16-Se22354	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S16-Se20335	CP	%	121			70-130	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	S16-Se24342	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S16-Se22354	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S16-Se22354	NCP	mg/kg	62	< 50	79	30%	Fail	Q15
TRH C29-C36	S16-Se22354	NCP	mg/kg	130	79	51	30%	Fail	Q15
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S16-Se24342	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S16-Se24342	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S16-Se24342	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S16-Se24342	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S16-Se24342	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S16-Se24342	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S16-Se24342	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S16-Se24342	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S16-Se22354	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S16-Se20334	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S16-Se20334	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S16-Se20334	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S16-Se20334	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1221	S16-Se20334	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S16-Se20334	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S16-Se22354	NCP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S16-Se22354	NCP	mg/kg	130	< 100	61	30%	Fail
TRH >C34-C40	S16-Se22354	NCP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S16-Se23267	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S16-Se23267	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S16-Se23267	NCP	mg/kg	9.4	8.3	13	30%	Pass
Copper	S16-Se23267	NCP	mg/kg	12	9.7	25	30%	Pass
Lead	S16-Se23267	NCP	mg/kg	17	11	45	30%	Fail
Mercury	S16-Se23267	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Nickel	S16-Se23267	NCP	mg/kg	7.8	6.6	18	30%	Pass
Zinc	S16-Se23267	NCP	mg/kg	29	23	21	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S16-Se11545	NCP	%	25	22	17	30%	Pass

Quality Control Analyte Summary Compliance

The table below is the actual occurrence of QC performed on the batch of samples within this report and as defined below

Analysis	Samples Analysed	Laboratory Duplicates Reported	Laboratory Matrix Spikes Reported	Method Blanks Reported	Laboratory Control Samples Reported
BTEX	2	1	1	1	1
Total Recoverable Hydrocarbons - 1999 NEPM	2	1	1	1	1
Total Recoverable Hydrocarbons - 2013 NEPM	2	1	1	1	1
Polycyclic Aromatic Hydrocarbons	2	1	1	1	1
Organochlorine Pesticides	2	1	1	1	1
Polychlorinated Biphenyls	2	1	1	1	1
Heavy Metals	2	1	1	1	1
% Moisture	2	1	NA	NA	NA

Quality Control Parameter Frequency Compliance follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure April 2011, Schedule B3, Guideline on Laboratory Analysis of Potentially Contaminated Soils and US EPA SW-846 Chapter 1: 'Quality Control'.

It comprises the following when a laboratory process batch is deemed to consist of up to 20 samples that are similar in terms of matrix and test procedure, and are processed as one unit for QC purposes. If more than 20 samples are being processed, they are considered as more than one batch.

Method blank

One method blank per process batch.

Laboratory duplicate

There should be at least one duplicate per process batch, or two duplicates if the process batch exceeds 10 samples.

Laboratory control sample (LCS)

There should be at least one LCS per process batch.

Matrix spikes

There should be one matrix spike per matrix type per process batch.

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
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Ivan Taylor	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Inorganic (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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Appendix J: Quality Assurance/Control

Quality Assurance and Quality Control

Field QA/QC

Sampling Procedures

Fieldwork was undertaken by qualified and experienced Prensa personnel.

The sampling, decontamination and storage works were conducted in accordance with Prensa Environmental Work Instructions, which are based on industry accepted standard practice and NEPM 2013.

Between each sampling location, new nitrile gloves were used to reduce the potential for cross contamination to occur.

Calibration certificates for the PID are provided in Appendix J.

Soil samples were placed in laboratory supplied jars, bags and bottles with Teflon lined lids and preservative, where required. The samples were stored in chilled ice chests before being transported to the laboratory along with chain of custody documentation.

Quality Control Samples

Field Duplicate Samples

The purpose of duplicate samples is to estimate the variability of a given characteristic or contaminant associated with a population.

Field duplicate soil samples were collected from soil immediately adjacent to the primary sample by placing approximately equal portions of the primary sample into two (2) sample jars. Samples were labelled so as to conceal their relationship to the primary sample from the laboratory.

The blind and split duplicate samples analysed are outlined in Table K1.

Table K1: Field Blind and Split Duplicate Analysed				
Medium	Primary Sample	Blind Replicate	Split Sample	Analysis
Fill	55494_TP14_0.5	55494_QC7	55494_QC8	Metals, TRH, BTEX, PAH, OCP and PCB.
Fill	55494_TP18_0.2	55494_QC9	55494_QC10	Metals, TRH, BTEX, PAH, OCP and PCB.

The quantity of duplicate samples analysed conformed to the frequency set in the DQI (Appendix A).

Relative percent differences (RPDs) were calculated for each of the duplicate samples analysed. RPDs were calculated by dividing the difference between the primary sample and duplicate sample by the average of the two, as shown below:

$$RPD = \frac{(X_1 - X_2)}{(X_1 + X_2)/2} \times 100\%$$

Where: X_1 = Primary sample result; and

X_2 = Replicate sample result.

When calculating the RPDs, the following procedures were also considered:

- RPDs were only considered when a concentration was greater than the PQL; and
- In instances where results were greater than the PQL for the one (1) sample, but below PQL for the corresponding primary or duplicate sample, a result equal to the PQL value was adopted where necessary in order to make a calculation possible.

RPDs for duplicate samples were calculated and the results are attached in Table T3 in the 'Tables' section of this report and in the laboratory reports in Appendix I. RPDs have also been summarised in Table K2.

Table K2: Field Blind and Split Duplicate RPD results

Medium	Primary Sample	Blind Replicate	Split Sample	Result
Fill	55494_TP14_0.5	55494_QC7	55494_QC8	RPD results were within the acceptable ranges set out in the DQIs (Appendix A) with some minor exceedances for PAHs and metals between the primary and split samples.
Fill	55494_TP18_0.2	55494_QC9	55494_QC10	RPD results were within the acceptable ranges set out in the DQIs (Appendix A) with some minor exceedances for PAHs and metals between the primary and split samples.

The quantity of duplicate samples conformed to the frequency set in the DQI (Appendix A).

The RPDs of soil duplicated sample pairs were generally below the acceptable limits with some exceedances for metals and PAHs. The concentrations of these analytes where RPDs were exceeded were not greater than the assessment criteria and are considered to be attributed to the heterogeneous nature of the soil rather than sampling procedures. Therefore, elevated RPDs are not considered to affect the integrity of reliability of the overall results.

Blank Samples

A rinsate blanks and trip blank were collected and submitted for laboratory analysis as outlined in Table K3. The results for the blank samples are summarised in Table T4 and Table T5 in the 'Tables' section of this report and in the laboratory reports in Appendix I.

Rinsate blanks consist of pre-preserved bottles filled with laboratory prepared water that is passed over decontaminated field equipment and then collected in containers used for the sampling process. Rinsate blanks were preserved in a similar manner to the original samples. The rinsate blank was a check on decontamination procedures.

Trip blanks assess the potential for cross contamination between transit from the site to the laboratory. Samples were analysed for volatile compounds. The trip blank sample was prepared by the primary laboratory, carried to the field unopened and subjected to the same preservation methods as the primary field samples.

Table K3: Blank Sample Analysis and Results

Type/Medium	Sample	Analysis	Results
Trip Blank (Soil)	55494_TB1	TRH C ₆ – C ₁₀ and BTEX	Concentrations were less than the DQIs.
Rinsate Blank (Water)	55494_RB1	Metals, TRH, BTEX, PAH, OCP and PCB.	Concentrations were less than the DQIs.

The quantity of blanks samples analysed conformed to the frequency set in the DQI (Appendix A).

Based on the results it can be considered that:

- Decontamination procedures were adequate and contaminants were unlikely to have been introduced by contact of the sampling equipment with the soil sampled; and
- Cross contamination from the atmosphere between transit of samples from the site to the laboratory was unlikely to have occurred.

Laboratory Quality Assurance/Quality Control

The laboratories conducted their own internal quality program for assessment of the repeatability of the analytical procedures and instrument accuracy under their NATA accreditation. This included analysis of laboratory blank samples, duplicate samples, spike samples, control samples and surrogate spikes. The laboratory QA/QC procedures and results are described within the laboratory reports presented in Appendix I.

The laboratory internal QA/QC sample results were reviewed and were consistent with the laboratory's NATA guidelines. Furthermore, the adoption of the general advisory ranges for specific recoveries has been used to screen laboratory data. Where recoveries were outside these ranges the data was assessed in relation to specific laboratory comments, published industry 'norms' for specific parameters and/or the likely impact on the interpretation of the meaning of the results..

Based on the reported laboratory QA/QC samples and methods used, the results were considered to be acceptable.

Quality Statement

The sampling methods (including sample preservation, transport and decontamination procedures) and laboratory methods followed during the assessment were consistent with Prensa Work Instructions and were found to meet the DQIs for this project. It was considered that the data was sufficiently collected and results can be relied upon for the purpose of this assessment

Appendix K: Calibration Certificates



Air-Met Scientific P/L
7-11 Ceylon Street
Nunawading
Victoria 3131, Australia

Calibration Certificate

This document hereby certifies that this instrument detailed has been calibrated to the parameters listed below.

Certificate Print Date: 3 June, 2016

Call ID: 00192655

Calibration Date: 1 June, 2016

Job / SO Number: 217875

Next Calibration Due: 1 December, 2016

Customer: PRENSA

Type: Port Gas Det

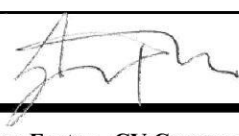
Model: GAS

Serial No: 595-000852

Description: MiniRae Lite

Sensor	Date Code	Gas Bottle No.	Calibration Gas and Concentration	C.F	C.V	Certified	Instrument Readings	
							Before / Span Res.	After
PID	//	SY129	ISOBUTYLENE 100PPM, BAL			NIST	103.0ppm	100.3ppm
	//							
	//							
	//							
	//							
	//							

Completed by: Timothy Harmer

Signed: 

Australian Standard Alarm Levels ☐

CF - Conversion Factor, CV Compensated Value
CV = CF * Span Gas

Appendix L: Site Masterplan

