

Report on Phase 1 and 2 Contamination Investigation

12 – 14 Phillip Street and 333 Church Street, Parramatta

> Prepared for Parramatta City Council

> > Project 72628.00 November 2011



Douglas Partners Geotechnics | Environment | Groundwater

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The undersigned, on behalf of Douglas Partners Pty Ltd, confirm that this document and all attached drawings, logs and test results have been checked and reviewed for errors, omissions and inaccuracies.

| 8 November 2011 |
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Executive Summary

Douglas Partners has conducted a Phase 1 / Phase 2 contamination investigation for the properties located at 12 – 14 Phillip Street and 333 Church Street, Parramatta NSW. The investigation was commissioned by Parramatta City Council in September 2011.

It is understood that Parramatta City Council are pursuing a property development strategy that involves the development of the Lennox Bridge car park (12-14 Phillip Street) and 333 Church Street, Parramatta. Although the final layout of the development strategy has not been finalised, it is understood that the development concept includes a multi-storey mixed use retail / residential building in the centre of the site, with several basement levels, a podium level adjoining the river frontage (comprising public walkway and retail stores), and associated landscaping.

The objectives of the investigation were to assess the potential for contamination of the site based on past and present site use, and to comment on the need for further investigation and/or management (if required). The investigation included an assessment of soil salinity, aggessivity and acid sulphate potential.

The Parramatta area is located mainly on Triassic aged Wiannamatta Group Bringelly shale, Minchinbury sandstone and Ashfield shale. The topography of the site slopes gently to the north-west before falling sharply towards the river to the north and north-west.

The investigation indicated that the site had historically been used for residential purposes before becoming and open air car park and commercial premises. It is understood that the façade of 333 Church Street is heritage listed. At the time of the investigation 12 - 14 Phillip Street was still being used as an open air car park, while 333 Church Street comprised a Greek restaurant, bookshops and a computer and IT store. The Greek restaurant appeared to be abandoned.

An intrusive soil investigation was conducted on the site. A total of 13 boreholes were drilled across the site in a general grid based pattern. Soil samples were collected from each of the borehole locations. Selected samples were analysed for a range of analytes, including heavy metals, polycyclic aromatic hydrocarbons, total petroleum hydrocarbons, BTEX – benzene, toluene, ethylbenzene, xylene, phenols, polychlorinated biphenyls, organochlorin pesticides, organophosphorus pesticides, volatile organic compounds and asbestos. Acid sulphate soil and salinity testing was also conducted. These samples were selected based on site observations (odour, staining etc), PID readings and their position within the borehole (i.e. fill or natural).

Three groundwater monitoring wells were positioned across the site in order to ascertain the inferred groundwater direction and enable groundwater assessment. One well was placed up gradient on the site (MW03) and two wells were placed down gradient (MW01 and MW02). Based on the groundwater levels and levels of the groundwater wells, the groundwater flow is inferred to be north to north west.

The bulk of soil samples tested returned either non detect or concentrations within the adopted site assessment criteria (SAC). Soil sample BH05/0.4-0.5 was found to have a lead concentration of 630 mg/kg, above the criteria for open space / parks (HIL C) of 600 mg/kg. The concentration of lead was below the criteria for residential with minimal access to soils (HIL D). The source of the lead may be the filling or lead based paints used on former structures.



Two samples returned positive results for asbestos. MW01/0.5-0.6 was found to have chrysotile and amosite asbestos with trace respirable fibres detected. BH07/0.8-1.0 was also found to have chrystotile and amosite asbestos, but with no respirable fibres. The asbestos may be sourced from a possible asbestos pipe passing in close proximity to the two bores, asbestos in the fill and/or residual asbestos resulting from the demolition of former structures.

The results of the groundwater analysis indicated that organic and inorganic analyte concentrations were within the adopted GIL, with the exception of copper in MW01 (4 μ g/L), MW02 (3 μ g/L) and MW03 (2 μ g/L), exceeding the GIL 1.3 μ g/L. The elevated copper level is considered to be indicative of background levels and is therefore not considered to be significant.

On the basis of the analytical results of the acid sulphate soil tests, it is considered that the likelihood of the presence of ASS and acidic components in soil across the site is low.

Based on the site observations and analytical results, it is considered that there are not likely to be any significant issues with the proposed development as a result of soil salinity or aggressivity.

This Phase 1 and 2 contamination investigation indicates that there is generally a low risk of soil or groundwater contamination within the site. As such, the site is considered, from a contamination perspective, to be generally suitable for the proposed development.

The following recommendations are provided in terms of further site investigations and management:

- It appears that there may be some asbestos on the site due to a former asbestos cement pipe/conduit located in the north western corner of the site, or asbestos in the filling (MW01 and BH107). In the event that this section is to be excavated during construction works, any asbestos cement materials should be removed by a suitably qualified and AS A licenced contractor. Given the detection of trace respirable fibres, air monitoring will be required as part of the works;
- Should any asbestos fragments be detected during future civil works, this area should be demarcated and the AS A licensed contractor engaged to removed the identified impact;
- Any soils requiring removal from the site must initially be classified in accordance with the NSW
 waste classification guidelines; and
- Due to the limited access beneath the building at 333 Church Street, DP recommends that once the concrete slabs associated with the building have been removed, additional sampling in this area is conducted to ensure a complete sampling density in line with OEH NSW requirements.



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Abbreviations

| AEC | Areas of Environmental Concern |
|--------------|---|
| ANZECC | Australia and New Zealand Environment and Conservation Council |
| ASS | Acid Sulphate Soil |
| ASSMAC | Acid Sulphate Soils Management Advisory Committee |
| BGL | Below Ground Level |
| BH | Borehole |
| BTEX | Benzene, Toluene, Ethylbenzene, Xylene |
| CLM Act | Contaminated Land Management Act |
| COC | Chain of Custody |
| COPC | Contaminants of Potential Concern |
| DEC | Department of Environment and Conservation (now OEH) |
| DECCW | Department of Environment, Climate Change and Water (now OEH) |
| DIPNR | Department of Infrastructure, Planning and Natural Resources |
| DP | Douglas Partners |
| DQI | Data Quality Indicator |
| DQO | Data Quality Objective |
| EC | Electrical Conductivity |
| EPA | Environmental Protection Agency (now OEH) |
| ESP | Exchangeable Sodium Percentage |
| GIL | Groundwater Investigation Level |
| GW | Groundwater |
| Heavy Metals | Refers to Arsenic, Cadmium, Chromium, Copper, Lead, Mercury, Nickel, Zinc |
| HIL | Health-based Investigation Level |
| LEP | Local Environment Plan |
| LNAPL | Light Non-aqueous Phase Liquid |
| MW | Monitoring Well |
| NATA | National Association of Testing Authorities |
| NEPM | National Environment Protection Measure |
| OCP | Organochlorine Pesticides |
| OEH | Office of Environment and Heritage |
| OPP | Organophosphorus Pesticides |
| PASS | Potential Acid Sulphate Soil |
| PAH | Polycyclic Aromatic Hydrocarbons |
| PCB | Polychlorinated biphenyls |
| PID | Photo-ionisation Detector |
| POEO | Protection of the Environment Operations Act |
| PPM | Parts Per Million |
| QA/QC | Quality Assurance/Quality Control |
| RPD | Relative Percentage Difference |
| SAC | Site Assessment Criteria |
| SPOCAS | Peroxide Oxidation Combined Acidity Sulphate Testing |
| SVVL | Standing Water Level |
| IPH | I otal Petroleum Hydrocarbons |
| USI | Underground Storage Lank |
| VOC | Volatile Organic Compounds |



Report on Phase 1 / Phase 2 Contamination Investigation 12 – 14 Phillip and 333 Church Streets, Parramatta

1. Introduction

This report presents the results of a Phase 1 / Phase 2 contamination investigation, undertaken for 12 – 14 Phillip and 333 Church Streets, Parramatta, New South Wales (hereon referred to as "the site"). The investigation was commissioned by Ms Lucinda Mander-Jones of Parramatta City Council in a letter of engagement dated 16 September, 2011.

It is understood that Parramatta City Council are pursuing a property development strategy that involves the development of the Lennox Bridge car park (12-14 Phillip Street) and 333 Church Street, Parramatta. Although the final layout of the development strategy has not been finalised, it is understood that the development concept includes a multi-storey mixed use retail / residential building in the centre of the site, with several basement levels, a podium level adjoining the river frontage (comprising public walkway and retail stores), and associated landscaping.

The objectives of the investigation were to assess the potential for contamination of the site based on past and present site use, and to comment on the need for further investigation and/or management (if required). The investigation includes an assessment of soil salinity, aggessivity and acid sulphate potential.

2. Scope of Works

The scope of the current Phase 1 and 2 contamination investigation comprised the following:

2.1 Desktop Study

- A site walkover, in order to identify site features, site activities, and any potential contamination issues visually apparent;
- Identification of the property street address and property description, name and address of the owner;
- Search of the current and historical titles and deposited plans to identify previous owners and potentially contaminating activities;
- Review of historical aerial photographs;
- Search of the Contaminated Lands Register for notices issued under the *Contaminated Lands Management Act* 1997;
- Conduct a groundwater bore search in the vicinity of the site;
- Search the WorkCover database for records of any dangerous goods licences;



- Obtain and review Section 149 (2 and 5) certificates for the site; and
- Review general map information, including geological, acid sulphate potential, salinity and hydrogeological information.

2.2 Fieldwork

- Position and auger/push tube 13 test bores for environmental, salinity and acid sulphate soil (ASS) sampling. The bores were extended to a maximum of 7.0 m depth, 0.5 m into natural soil, or prior refusal;
- Collection of soil samples from the auger/push tubes at broadly regular intervals, and based on potential indicators of contamination, such as staining or olfactory signs;
- Screening of soil samples using a photo-ionisation detector (PID) for volatile organic compounds;
- Screening of 15 soil samples from two of the deep bores for existing and oxidised pH, as an initial screen for ASS potential;
- Despatch of 64 soil samples to a NATA accredited laboratory for analysis of the following contaminants of potential concern (COPC):
 - heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc) 20 samples;
 - o polycyclic aromatic hydrocarbons (PAH) 20 samples;
 - total petroleum hydrocarbons (TPH) 20 samples;
 - monocyclic aromatic hydrocarbons (BTEX benzene, toluene, ethylbenzene, xylene) 20 samples;
 - o phenols 14samples;
 - polychlorinated biphenyls (PCB) 14 samples;
 - o organochlorine pesticides (OCP) and organophosphorus pesticides (OPP) 14 samples;
 - volatile organic compounds (VOC) 6 samples;
 - o asbestos 14 samples;
 - QA/QC samples analysed for heavy metals, TPH, BTEX and PAH (two intra-laboratory and one inter-laboratory replicate samples, two trip blanks and two trip spikes);
- Despatch of 15 soil samples to the NATA accredited laboratory for salinity and aggressivity indicators analyses, including:
 - o textural classification;
 - o pH
 - electrical conductivity (EC);
 - o sulphate and chloride;
 - Exchangeable Sodium Percentage (ESP);



- Conversion of three of the bores into groundwater monitoring wells to a maximum depth of 7 m below ground level (bgl). These were identified as MW01, MW02 and MW03. The wells were developed and sampled, including collection of field parameters such as pH, dissolved oxygen, temperature and electrical conductivity;
- A total of three groundwater samples were sent to the laboratory for quantitative analysis. The following potential contaminants were assessed:
 - o heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
 - o TPH;
 - o monocyclic aromatic hydrocarbons (BTEX);

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- o PAH;
- o PCB;
- o VOC;
- o Hardness; and
- o QA/QC samples analysed for heavy metals and PAH (1 intra-laboratory replicate).

2.3 Reporting

A combined phase 1 and phase 2 contamination investigation report (including salinity, aggressivity and acid sulphate soil assessment) was prepared, detailing the fieldwork rationale and methodology, results of the assessment, a discussion of the analytical results and recommendations for further work if required. The report is prepared in general accordance with the published Office of Environment and Heritage NSW (OEH) endorsed guidelines.

3. Site Identification and Location

3.1 Site Location

The property at 12 – 14 Phillip Street is currently a large open air hardstand car park, with a steep grass covered slope falling north and north-west from the edge of the car park towards the banks of Parramatta River. The property is surrounded by Parramatta River to the north, a shopping precinct and Church street to the east, commercial properties to the south, and a small number of commercial properties and open space to the west. The entrance to the site is from Phillip Street.

The property at 333 Church Street was recently used for mixed commercial purposes, including a Greek restaurant, bookshops and a computer and IT store. At the time of the inspection, the Greek restaurant still contained furnishings, utensils and office equipment; however it appeared that the site had not been entered for a lengthy period of time.



The property at 12 - 14 Phillip Street is identified as Lot 1 in deposited plan 791693 and is zoned as B4 – mixed use. The property is noted to be flood prone land. The property at 333 Church Street is identified as Lot 3 in deposited plan 825049 and is zoned as B4 – mixed use. The façade of the building is noted to be heritage listed.

4. Geology, Topography and Hydrogeology

Reference to the Sydney 1:250,000 series geological sheet indicates that the Parramatta area is located mainly on Triassic aged Wiannamatta Group Bringelly shale, Minchinbury sandstone and Ashfield shale.

The topography of the site slopes gently to the north-west before falling sharply towards the river to the north and north west.

Parramatta River lies to the north and west of the site. Further to the north is Hunts Creek and Lake Parramatta. Further to the south is Duck River. Parramatta River flows to the east into Sydney Harbour and the Tasman Sea. The anticipated groundwater flow from the site is north towards the river.

4.1 Groundwater Bore Search

A groundwater bore search of the Department of Water and Energy website (previously held by the Department of Natural Resources) was conducted on 20 September 2011. Five groundwater bores were located within a 1 km radius of the site. Work summaries were available for all of the bores. Details are provided in Appendix B. Two of the bores were noted to be for domestic use (GW108611 and GW024667), while three were for monitoring purposes (GW110912, GW110913 and GW110914).

Standing water levels (SWL) were noted to be between 6.2 m bgl (GW108611) and 7.0 m bgl (GW110912 and GW110913). Drillers logs supplied indicated that the lithology across the area generally comprised fill, followed by sandy red or red brown clay, shale and sandstone.

All registered bores are located on the opposite side of Parramatta Rive to the subject site.

4.2 Salinity Mapping

The former Department of Infrastructure Planning and Natural Resources (DIPNR), on their map entitled "Salinity Potential in Western Sydney 2002", infers "moderate salinity potential" over the site. The DIPNR mapping is based on soil type, surface level and general groundwater considerations but is not in general ground-truthed, hence it is not generally known if actual soil salinities are consistent with the potential salinities of DIPNR.



4.3 Acid Sulphate Soils Mapping

Based on Parramatta City Council's Draft Local Environment Plan 2010 (LEP), it appears that the site is in an area of no known acid sulphate soil (ASS). The nearest known area for potential ASS is located approximately 300 m to the east of the site, with Class 1 and 4 soils potentially present. Class 1 ASS require development consent for any works to be conducted, while Class 4 ASS require consent for works more than 2 m below natural ground surface or where works are likely to lower the existing water table more than 2 m.

Approximately 300 m to the north-west of the site, beyond the river are Class 5 ASS. Class 5 ASS require consent for works within 500 m adjacent to Class 1, 2, 3 or 4 land that is below 5 m AHD by which the water table is likely to be lowered below 1 m AHD on adjacent ASS classified land.

5. Site History

A review of the site history is based on historical aerial photographs, historical title deeds, a WorkCover Dangerous Goods database search, a search for regulatory notices (issued under the *Contaminated Lands Management Act* 1997 (CLM Act) and *Protection of the Environment Operations Act* 1997 (POEO Act)), and a review of Council Section 149 (2) and (5) certificates.

5.1 Aerial Photograph Record

Historical aerial photographs from the years 1943, 1961, 1970, 1986, 2002 and 2011 were obtained from the NSW Department of Lands Office, Nearmap and Six Viewer websites. These photographs were studied in order to identify the likely past uses and changes to the site, particularly those of a potentially contaminating nature. The findings are summarised below and copies of the aerial photographs are provided in Appendix C.

- **1943** The site appears to be used primarily for residential purposes. A number of buildings and associated backyards are located across the site. Some of these features are associated with commercial or retail properties fronting Church Street. To the east are commercial properties fronting Church Street. To the south of the property is Phillip Street. A number of residential / commercial properties are located to the west. To the north is the Parramatta River. It is noted that Parramatta River, in the vicinity of the site, appears significantly narrower than currently (2011) exists.
- **1961** Additional small buildings / sheds are apparent within the site, particularly in the northwestern portion. The majority of the site has not changed significantly since 1943. There are no notable changes in the surrounding properties.
- **1970** Although the aerial photograph is of poor quality, it appears that the former buildings covering the bulk of the site have been demolished and the site is now an open air car park (a number of vehicles are apparent). A building previously located on the southern boundary has been cleared to create a laneway access to the car park. The majority of the vegetation on the western and northern boundaries has been cleared. There is no

noted significant change to the surrounding properties, however again it is noted that the photograph is of poor quality.

- **1986** The majority of the site is used as an open air car park (12-14 Phillip Street), while a building is present in the north eastern corner of the site (333 Church Street). To the north of the site is Parramatta River. At this stage, the river in the vicinity of the site appears wider and is similar to that currently existing (2011). To the east and south are commercial premises / shops and Church Street and Phillip Street respectively. West of the site is the weir and Marsden Street, followed by open space / parkland.
- **2002** The site appears relatively unchanged since the 1986 photograph, with the exception of some ground disturbance in the south-western portion, presumably associated with the planned construction of an apartment building, now located to the south-west of the site.
- 2011 The site appears to generally be unchanged since the 2002 photograph. Parramatta Riverside Theatre is located to the north of the site, beyond the river. To the south west a residential apartment block is noted.

It appears that the site was historically used for residential and part commercial / retail purposes (at least since 1943), prior to being redeveloped into an open air car park and retail building to the north east sometime between 1961 and 1970. The site use has remained unchanged since that time.

5.2 Historical Title Deeds Search

A historical title deeds search was conducted for the site. Searches were undertaken by Mark Groll of Service First Registration Pty Ltd. The tables below summarises the reported title deed information. A full copy is also provided in Appendix D.



Marsden, Phillip & Church Streets, Parramatta Description: - Lot 1 D.P. 791693

As regards that part marked (1) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use | |
|---------------------|--|-----------------------------|--|
| 28.12.1897 | Elsie Ellen Fleay (Spinster) | Residential/Open Space | |
| 10.10.1932 | Alexander Melville (Agent) | Residential/Open Space | |
| 11 07 1022 | Donald Fleay Melville (Farmer & Grazier) | Agricultural (regidential | |
| 11.07.1955 | Alexander Melville (Agent) | Agricultural / Tesiderillar | |
| 22.07.1041 | Amy Jane Melville (Widow) | Agricultural (regidential | |
| 22.07.1941 | Donald Fleay Melville (Farmer & Grazier) | Agricultural / Tesiderillar | |
| 11.06.1041 | Amy Jane Melville (Widow) | Agricultural / regidential | |
| 11.00.1941 | Donald Fleay Melville (Farmer & Grazier) | Agricultural / Tesiderillar | |
| 09.10.1959 | Coulan George Burnham (Company Director) | Commercial / residential | |
| 30.06.1970 | Burnham Brothers Pty Limited | Commercial | |
| 20.00.1072 | M.B.C. (Parramatta) Pty Limited | Commercial | |
| 20.09.1975 | (Now T.S.S.S. Parramatta Pty Ltd) | Commercial | |
| | John Patrick Partridge (Real Estate Agent) | | |
| 13.11.1979 | Christopher Errol Underwood (Jeweller) | Commercial | |
| | David Garth Tetley Miles (Real Estate Agent) | Commercial | |
| | Gail Miles (Married Woman) | | |
| 27.01.1981 | # Council of the City of Parramatta | Commercial/Car park | |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (2) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|-------------------|
| 28.12.1897 | Elsie Ellen Fleay (Spinster) | Residential |
| 10.10.1932 | Alexander Melville (Agent) | Residential |

Search continued as regards that part marked (2) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use | |
|---------------------|--|----------------------------|--|
| 11 07 1022 | Donald Fleay Melville (Farmer & Grazier) | Agricultural (regidential | |
| 11.07.1955 | Alexander Melville (Agent) | Agricultural / Tesidential | |
| 22.07.1041 | Amy Jane Melville (Widow) | Agricultual / residential | |
| 22.07.1941 | Donald Fleay Melville (Farmer & Grazier) | | |
| 11.06.1941 | Amy Jane Melville (Widow) | Agricultural / residential | |
| | Donald Fleay Melville (Farmer & Grazier) | | |
| 07.12.1953 | Stanley Kerkenzov (Radio Salesman) | Commercial | |
| 28.10.1966 | # Council of the City of Parramatta | Commercial/Car park | |

Denotes Current Registered Proprietor



As regards that part marked (3) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|----------------------------|
| 28.12.1897 | Elsie Ellen Fleay (Spinster) | Residential |
| 10.10.1932 | Alexander Melville (Agent) | Residential |
| 11.07.1933 | Donald Fleay Melville (Farmer & Grazier) Alexander Melville (Agent) | Agricultural / residential |
| 22.07.1941 | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) | Agricultural / residential |
| 11.06.1941 | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) | Agricultural / residential |
| 29.01.1954 | Mark Foy's Limited | Commercial |
| 07.07.1965 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards those parts marked (4) & (5) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|----------------------------|
| 21.05.1902 | James Channon (Manufacturer) | Residential |
| | Eliza Mary Haydon (Spinster) | |
| 06 10 1019 | Eileen Bridget Haydon (Spinster) | Desidential |
| 00.12.1918 | (Now Eileen Bridget Burton, Married Woman) | Residentia |
| | Mary Theresa Haydon (Spinster) | |
| 28.02.1923 | Lee Sing (Merchant & Married Woman) | Residential |
| 28.01.1924 | Alfred Bassett (Grazier) | Agricultural / residential |
| 18.02.1935 | John McAuslan Ritchie (Gentleman) | Residential |
| 07.12.1953 | Mark Foy's Limited | Commercial |
| 21.02.1968 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

As regards that part marked (6) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|----------------------------|
| 21.05.1902 | James Channon (Manufacturer) | Residential |
| | Eliza Mary Haydon (Spinster) | |
| 06 12 1019 | Eileen Bridget Haydon (Spinster) | Residential |
| 00.12.1918 | (Now Eileen Bridget Burton, Married Woman) | Residential |
| | Mary Theresa Haydon (Spinster) | |
| 09.08.1923 | Lee Sing (Merchant & Married Woman) | Residential |
| 28.01.1924 | Alfred Bassett (Grazier) | Agricultural / residential |
| 18.02.1935 | John McAuslan Ritchie (Gentleman) | Residential |
| 07.12.1953 | Mark Foy's Limited | Commercial |
| 21.02.1968 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>





As regards that part marked (7) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 21.05.1902 | James Channon (Manufacturer) | Residential |
| | Eliza Mary Haydon (Spinster) | |
| 06 12 1019 | Eileen Bridget Haydon (Spinster) | Posidontial |
| 06.12.1918 | (Now Eileen Bridget Burton, Married Woman) | Residentia |
| | Mary Theresa Haydon (Spinster) | |
| 17 11 1000 | Stephen Arthur Ellich (Furniture Dealer) | Posidontial |
| 17.11.1922 | George Andrew Paul (Furniture Dealer) | Residential |
| 02.05.1935 | John McAuslan Ritchie (Gentleman) | Residential |
| 07.12.1953 | Mark Foy's Limited | Commercial |
| 25.10.1967 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (8) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 06.01.1876 | David Houison (& His Deceased Estate) | Residential |
| 17.03.1921 | Sidney Smith (Produce Merchant) | Residential |
| 20.01.1025 | Stephen Arthur Ellich (Furniture Dealer) | Residential |
| 30.01.1925 | George Andrew Paul (Furniture Dealer) | |
| 20.07.1931 | Sidney Smith (Produce Merchant) | Residential |
| 22 07 1051 | Leslie Philip Henry Jeffery (Medical Practitioner) | Commercial |
| 23.07.1951 | Jack Albert Houston Jeffery (Medical Practitioner) | |
| 24.03.1961 | Number 10 Phillip Street Pty Limited | Commercial |
| 17.08.1967 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (9) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| | Frederick Vahrenkamp (Cabinet Maker) | |
| 17.04.1872 | (Also known as Frederick William Vahrenkamp) | Residential |
| | (& His deceased estate) | |
| 30.11.1953 | | |
| (Purchase) | James Sidney Greenfield (Master Butcher) | Commercial |
| 20.12.1956 | | Commercial |
| (Confirmation) | | |
| 26.03.1957 | Presbyterian Church (New South Wales) Property | Commorgial |
| | Trust | Commercial |
| 31.10.1967 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor



| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|--|--|---------------------|
| 17.04.1872 | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Residential |
| 30.11.1953 (Purchase) 20.12.1956 (Confirmation) | James Sidney Greenfield (Master Butcher) | Commercial |
| 26.03.1957 | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Commercial |
| 24.03.1988 | # Council of the City of Parramatta | Commercial/Car park |

As regards that part marked (10) on the attached copy of D.P. 791693

Denotes Current Registered Proprietor

As regards that part marked (11) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 11.03.1910 | Richard Lambert Hamilton (Storeman) | Residential |
| 05.06.1925 | Charles Albert Harry Freestone (Manufacturer) | Residential |
| 08.05.1959 | Maggie Frances Freestone (Widow) | Residential |
| 29.05.1959 | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Commercial |
| 24.03.1988 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

As regards that part marked (12) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 11.03.1910 | Richard Lambert Hamilton (Storeman) | Residential |
| 05.06.1925 | Charles Albert Harry Freestone (Manufacturer) | Residential |
| 08.05.1959 | Maggie Frances Freestone (Widow) | Residential |
| 29.05.1959 | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Commercial |
| 31.10.1967 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor



As regards that part marked (13) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|---------------------|
| 11.03.1910 | Richard Lambert Hamilton (Storeman) | Residential |
| 05.06.1925 | Charles Albert Harry Freestone (Manufacturer) | Residential |
| 08.05.1959 | Maggie Frances Freestone (Widow) | Residential |
| 01.06.1959 | Rumseys Seed Pty Limited | Commercial |
| 22.10.1963 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (14) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|-------------------|
| 22.08.1888 | John Booth (Freeholder) | Residential |
| 16.03.1916 | Richard Lambert Hamilton (Storeman) | Residential |
| 05.06.1925 | Charles Albert Harry Freestone (Manufacturer) | Residential |
| 08.05.1959 | Maggie Frances Freestone (Widow) | Residential |

Search continued as regards that part marked (14) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 01.06.1959 | Rumseys Seed Pty Limited | Commercial |
| 22.10.1963 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (15) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|--------------------------|---|----------------------------|
| 08.05.1872 (1872 to?) | William Byrnes (Farmer) | Agricultural / residential |
| | This parcel of land subsequently formed part of the site of a Right of Way. The next event found for this parcel is the issue of Certificate of Title Volume 6714 Folio 96 dated 31.08.1953 It would appear that Charles Albert Harry Freestone (Manufacturer) may have acquired this parcel by possession | |
| 31.08.1953 | Charles Albert Harry Freestone (Manufacturer) | Residential |
| 08.05.1959 | Maggie Frances Freestone (Widow) | Residential |
| 01.06.1959 | Rumseys Seed Pty Limited | Commercial |
| 22.10.1963 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>



As regards that part marked (16) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|--|--|-------------------|
| 17.04.1872 | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Commercial |
| 30.11.1953 (Purchase) 20.12.1956 (Confirmation) | James Sidney Greenfield (Master Butcher) | Commercial |
| Circa 1956 | This parcel became a Council Public Road upon the approval of D.P. 161817 at the Title Office. Such dedication being pursuant to the Local Government Act of 1919 | |
| 1956 | # Council of the City of Parramatta | Roadway |

Denotes Current Registered Proprietor

As regards that part marked (17) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 17.04.1872 | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Residential |
| 30.11.1953 | James Sidney Greenfield (Master Butcher) | Commercial |
| 14.11.1956 | Mun Wai Yuen (Green Grocer) | Commercial |
| 12.06.1985 | Japour Pty Limited | Commercial |
| 12.02.1987 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (18) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 27.07.1908 | Isabella Rigelsford (Married Woman) | Residential |
| 19.08.1918 | Violet Pearle Couper Leabeater (Married Woman) | Residential |
| 20.07.1949 | Rumseys Seed Pty Limited | Commercial |
| 01.03.1968 | N.S.W. Permanent Building Society Limited | Commercial |
| 05.12.1969 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor



As regards that part marked (19) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|----------------------------|
| 28.06.1921 | Edward Joseph Pearce (Farmer) | Agricultural / residential |
| 21.09.1927 | Walter Riddle (Grazier) (& His deceased estate) | Agricultural / residential |
| 07.10.1947 | Albert William Riddle (Stud Master) | Commercial |
| 14.03.1950 | Joyce Innes Lucas (Married Woman) | Commercial |
| 14.03.1950 | Bankers & Traders Insurance Company Limited | Commercial |
| 02.08.1974 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

As regards that part marked (20) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|---------------------|
| 22.12.1921 | Beatrice Sutton (Married Woman) | Residential |
| 22 12 1022 | John Joseph Condon (Master Butcher) | Posidontial |
| 22.12.1925 | Richard Patrick Condon (Master Butcher) | Residential |
| | Andrew Derrin (Merchant) | |
| 06.11.1926 | James Melville Derrin (Merchant) | Residential |
| | William McLean Derrin (Merchant) | |
| 23.09.1935 | Sidney Joseph Adams (Property Owner) | Residential |
| 24 00 1035 | Alfred Ernest Baker (Store Keeper) | Commercial |
| 24.09.1955 | Arthur Frank Baker (Store Keeper) | |
| 05.05.1958 | Rumseys Seed Pty Limited | Commercial |
| 22.10.1963 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

As regards that part marked (21) on the attached copy of D.P. 791693

This parcel of land formed part of lands originally granted to John Byrnes dated 20th May 1840. John Byrnes and his deceased estate provided a Right of Way 10 feet wide during the 1800's. It would seem that the documentary title to the site of this Right of Way remained comprised in name of John Byrnes and his deceased estate up to the date of acquisition by Parramatta City Council by notification in Government Gazette dated 21.07.1967 Folio 2665.

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|---------------------|
| 21.07.1967 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>





As regards that part marked (22) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|-------------------|
| 26.08.1919 | George Sutton (Plumber) | Residential |
| 22 10 1022 | John Joseph Condon (Master Butcher) | Desidential |
| 22.10.1923 | Richard Patrick Condon (Master Butcher) | Residential |
| | Andrew Derrin (Merchant) | |
| 06.11.1926 | James Melville Derrin (Merchant) | Residential |
| | William McLean Derrin (Merchant) | |
| 23.09.1935 | Sidney Joseph Adams (Property Owner) | Residential |
| 23.03.1936 | Garnet Evans (Gentleman) | Decidential |
| | Mary Ellen Evans (Married Woman) | Residentia |

Search continued as regards that part marked (22) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 15.10.1940 | John Thomas Gettens (Valuator) | Residential |
| 06.06.1946 | John Edwin Fitzgerald Burns (Butcher) | Commercial |
| 23.02.1961 | Burns Animal Food Company Pty Limited | Commercial |
| 03.06.1977 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part marked (23) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 25.03.1915 | Priscilla Jane Beers (Widow) | Residential |
| 31.10.1960 | A.J. Yeo Pty Limited | Commercial |
| 12.08.1963 | Rigneys Holdings Limited | Commercial |
| 15.12.1964 | Arthurs Food Hall Pty Limited | Commercial |
| 16.101970 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

As regards that part marked (24) on the attached copy of D.P. 791693

This parcel of land is described as Right Title and Interest (Possessory Title) in Conveyance Book 2989 No. 854. This parcel of land is contained in the descriptions of the deeds listed below

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 31.10.1960 | A.J. Yeo Pty Limited | Commercial |
| 12.08.1963 | Rigneys Holdings Limited | Commercial |
| 15.12.1964 | Arthurs Food Hall Pty Limited | Commercial |
| 16.10.1970 | # Council of the City of Parramatta | Commercial/Car park |

Denotes Current Registered Proprietor

Phase 1 & 2 Contamination Investigation 12-14 Phillip and 333 Church Streets, Parramatta

As regards that part marked (25) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|---------------------|
| 07.05.1883 | Ann Beale (Spinster) | Residential |
| 27.10.1927 | Lee Sing | Residential |
| 03.09.1935 | Hermann Schreiber (Financier) | Residential |
| 29.09.1954 | Raymond Frank Pantlin (Store Keeper) | Commercial |
| 16.02.1968 | # Council of the City of Parramatta | Commercial/Car park |

<u># Denotes Current Registered Proprietor</u>

As regards that part highlighted pink and marked (26) on the attached copy of D.P. 791693

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|---|-------------------|
| 17.04.1872 | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Residential |
| 30.11.1953 | James Sidney Greenfield (Master Butcher) | Commercial |
| | After viewing D.P. 161817 it was found that this parcel was included in the Right of Way It would appear that the next transaction may have been the acquisition by Parramatta City Council This parcel is now comprised in Folio Identifier 1/791693 | |
| 27.07.1990 | # Council of the City of Parramatta | Roadway |

<u># Denotes Current Registered Proprietor</u>

As regards that part highlighted orange and marked (27) on the attached copy of D.P. 791693

This parcel of land formed part of lands originally granted to John Byrnes dated 20th May 1840. John Byrnes and his deceased estate provided a Right of Way 10 feet wide during the 1800's. It would seem that the documentary title to the site of this Right of Way remained comprised in name of John Byrnes and his deceased estate up to the date of acquisition by Parramatta City Council. The only gazette that we could find vesting in the Council is the Gazette dated 27.07.1990 Folio 7070.

| Date of Acquisition | Registered Proprietor(s) & Occupations | Possible Site Use |
|---------------------|--|-------------------|
| 27.07.1990 | # Council of the City of Parramatta | Roadway |

Denotes Current Registered Proprietor





Re: - 333 Church Street, Parramatta Description: - Lot 3 D.P. 825045

| Data of Association | Registered Proprietor(s) & | Possible Site Use | |
|---------------------|-------------------------------------|-------------------|--|
| Date of Acquisition | Occupations | | |
| 16.10.1923 | Anna Louisa Smith (Widow) | Residential | |
| 11.12.1923 | Claude Breasley (Real Estate Agent) | Commercial | |
| 06.03.1936 | Frank Edward Maling (Merchant) | Commercial | |
| 30.03.1937 | Sidney Joseph Adams (Gentleman) | Commercial | |
| 01.03.1938 | Frank Edward Maling (Merchant) | Commercial | |
| 28.10.1960 | Parramatta Arcade Pty Limited | Commercial | |
| 29.09.1988 | Interior No. 2 Pty Limited | Commercial | |
| | # Leo Papadolias | | |
| 15.05.1992 | # Anna Papadolias | Commorcial | |
| | # Stavros Skarmoutzos | Commercial | |
| | # Avgi Skarmoutzos | | |

<u># Denotes current Registered Proprietors</u>

It appears that Mark Foys purchased part of the land in order to open a store in Church Street near Lennox Bridge (Sydney Morning Herald article dated 7th June 1961). The store did not go ahead and Parramatta Council obtained the land. Based on the historical title records and aerial photographs it appears that Lot 1 within deposited plan 791693 (including the Phillip Street site) has been used for a mixture of residential and commercial purposes, prior to becoming an open air car park and roadway. Lot 3 in deposited plan 825045 has largely been used for commercial purposes.

5.3 NSW WorkCover Dangerous Goods Database

A search of the NSW WorkCover Dangerous Goods Database indicated that there were no dangerous goods stores registered for the site.

WorkCover Search documentation is provided in Appendix E.

5.4 Council Section 149 (2) and (5) Certificates

The section 149 (2) and (5) planning certificates for the site were obtained from Parramatta City Council and are dated 10 October 2011 (provided in Appendix F). The section 149 certificate for Lot 1 in deposited plan 791693 under the Parramatta City Centre Local Environmental Plan 2007, is zoned B4 – Mixed Use. The section 149 certificate for Lot 3 in deposited plan 825045 indicates that the site is also zoned B4 – Mixed Use. Neither of the sites is affected by any matters under Clause 59(2) of the Contaminated Land Management Act, 1997.

Copies of the Section 149 certificates are included in Appendix F.



5.5 Regulatory Notices Search

The OEH publishes records of contaminated sites under Section 58 of the CLM Act 1997 on a public database accessed via the internet. The notices relate to investigation and/or remediation of site contamination considered to pose a significant risk of harm under the definition in the CLM Act. More specifically, the notices cover the following:

- Actions taken by the EPA under section 15, 17, 19, 21, 23, 26 or 28 of the CLM Act;
- Actions taken by the EPA under section 35 and 36 of the Environmentally Hazardous Chemicals Act, 1985;
- Site audit statements provided to the EPA under section 52 of the CLM Act on sites subject to an enforced declaration order.

A search of the public database was conducted on the 21 September 2011 and revealed that the subject site was not listed.

It should be noted that the OEH record of notices for contaminated land does not provide a record of all contaminated land in NSW. At the time of preparing this report a total of 291 sites were registered in the database.

The OEH also issues environmental protection licences to the owners or operators of various industrial premises under the POEO Act. Licence conditions relate to pollution prevention and monitoring, and cleaner production through recycling and reuse and the implementation of best practice.

The OEH has made available a public register of notices under section 308 of the POEO Act. The register contains:

- environmental protection licences;
- applications for new licences and to transfer or vary existing licences;
- environmental protection and noise control licences;
- convictions in prosecutions under the POEO Act;
- the result of civil proceedings;
- licence review information;
- exemptions from provisions of the POEO Act or Regulations;
- approvals granted under Clause 9 of the POEO (Control of Burning) Regulation;
- approvals granted under Clause 7a of the POEO (Clean Air) Regulation.

A search of the register indicated that no licences were registered for the site.



6. Site Observations

A site inspection was conducted by an experienced environmental scientist from Douglas Partners on the 19 September 2011. The property at 333 Church Street appeared to have been abandoned at the time of the inspection. The building was previously used as a restaurant and the fully furnished kitchen and dining room remained. A small loading dock was noted, with an entrance from Lennox Bridge car park. The area was being utilised for the storage of furniture, cooking oil drums and other pieces. The building façade is understood to be heritage listed.

Lennox Bridge car park is located at 12 – 14 Phillip Street. The area is mainly covered in road base and bitumen, with some grassed areas along the western and northern perimeters. The grassed areas form public access areas, including a walking track along the Parramatta River foreshore. The site slopes steeply from the car park to the river foreshore, as indicated on Drawing 1, Appendix A.

There were no visual indicators of underground storage tanks (i.e. fill points, bowsers, vent pipes), nor were there any visual indicators of other forms of contamination (e.g. asbestos on the ground surface, chemical spills, vegetation die-back). It is noted that the investigation does not include a hazardous materials assessment of the building in the north-eastern corner of the site.

There were no visual indicators of salinity issues at the site, which can be in the form of heavy / localised soil erosion, salt crusting on the ground surface, the presence of salt tolerant plant species, or salt infestation / rising damp towards the base of the existing buildings.

7. Areas of Environmental Concern

The site appears to have been used for residential and commercial purposes prior to redevelopment as a car park and current commercial building. There is the potential that historical fibre cement materials containing asbestos may have been used in the construction of the former buildings (now removed). The demolition of any of these structures may have resulted in asbestos fragments being left in the surface soils, or any soils disturbed during the process. Furthermore, the use of lead based paints in the former buildings is likely. Residual lead contamination of surface or disturbed soils is a possibility.

The site has been filled in part for presumably levelling purposes. It is noted that the extent of fill in the areas sampled was generally low. However, the presence of imported fill presents an area of environmental concern, particularly if the origin is not known.

Parts of the site have been used for commercial purposes in the past, however, it is likely that these uses were associated with retail activities common to the area. Apart from the potential for minor localised spills of oils, fuels or cleaning products, it is considered unlikely that this landuse presents a significant area of environmental concern. Having said this, chlorinated solvents may have been used in small amounts for cleaning or degreasing.

There is no historical evidence that the site contains or previously contained underground storage tanks.



Anecdotal historical information indicated that a flood had passed through the site in the late 1890s. There is a low potential for the flood waters to have deposited materials of a contaminating nature, such as asbestos fragments, from another source site.

In summary, it is considered that, based on the examined historical information and the site inspection, the potential for significant contamination associated with the site is low.

8. Sampling, Analysis and Data Quality Objectives

8.1 Data Quality Objectives

The scope of works has been devised broadly in accordance with the seven step data quality objective (DQO) process, as defined in Australian Standard *Guide to the Sampling and Investigation of Potentially Contaminated Soil Part 1: Non-volatile and semi-volatile compounds* (AS 4482.1 – 2005). The DQO process is also described in NSW EPA (2006) *Guidelines for the Site Auditor Scheme* 2nd Edition, and US EPA (2000) *Guidance for the Data Quality Objective Process and Data Quality Objectives Process for Hazardous Waste Site Investigations*. The seven step DQO process is as follows:

- State the problem
- Identify the decision
- Identify inputs into the decision
- Define the boundary of the assessment
- Develop a decision rule
- Specify acceptable limits on decision errors
- Optimise the design for obtaining data

8.1.1 State the Problem

The site has historically been used for residential and commercial (in part) purposes prior to development for commercial use and as an open air car park. The site is now proposed for redevelopment including residential and retail uses. The problem to be addressed is the potential for contamination associated with the past or present uses, the potential for saline, aggressive and acid sulphate soils, and the need for remediation or management prior to or as part of the proposed development.

8.1.2 Identify the Decision

The primary decisions to be made in completing the investigation are as follows:

- Does the site, or is the site, likely to present a risk of harm to human health or the environment under the existing and proposed land uses?
- Is the site currently suitable for the proposed use?

- Is there any potential for groundwater contamination?
- Are there any off-site migration issues to be considered?
- Are there salinity or aggressivity issues that require management?
- Are there ASS that require management?

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- Is further investigation required to adequately address the abovementioned decisions?
- Is further investigation required to delineate the extent of any contamination identified?
- Does the site require remediation to ensure suitability for the proposed end use?

8.1.3 Identify Inputs into the Decision

The primary inputs into the decision are:

- available site information regarding activities undertaken on the site and the surrounding area;
- the local geology, topography and hydrology;
- Existing site operations and features, obtained through inspection;
- Soil profile information obtained through bore drilling and sampling;
- Screening results (PID and pH screening);
- Analytical results on both soil and groundwater samples;
- Assessment of analytical data / data sets against applicable published soil and groundwater assessment criteria.

8.1.4 Define the Boundary of the Assessment

The site, for the purpose of this assessment, is 12 – 14 Phillip Street and 333 Church Street, Parramatta, as depicted on Drawing 1, Appendix A.

8.1.5 Develop a Decision Rule

The decision rule is the comparison of analytical results against relevant published guideline criteria for soil and groundwater. These assessment criteria are addressed in Sections 10 and 11. Exceedance of these criteria, however, generally triggers further assessment rather than remediation.

Laboratory test results will be accepted and considered useable for this assessment under the following conditions:

- all laboratories used are accredited by NATA for the analyses undertaken;
- all practical quantitation limits (PQL) set by the laboratories fall below the assessment criteria adopted, or indicate across the board lack of detection (i.e. some of the GIL are difficult to achieve routinely by NATA accredited laboratories);
- The reported concentrations of analytes in the replicate sample pairs are within accepted limits; and

 the quality assurance / quality control (QA/QC, see Appendix G) protocols and results reported by the laboratories comply with the requirements of the NEPM 1999 "Guideline on Laboratory Analysis of Potentially Contaminated Soils" and Australian and New Zealand Environment and Conservation Council (ANZECC) 1996 "Guidelines for the Laboratory Analysis of Contaminated Soils".

8.1.6 Specify Acceptable Limits on Decision Errors

In order to ensure the quality of the soil and groundwater data, appropriate and adequate quality assurance and quality control (QA/QC) measures and evaluations should be incorporated into the sampling and analysis regime.

A field and laboratory QA/QC regime, comprising the collection and analysis of intra- and interlaboratory replicate samples was implemented to meet the requirements associated with the following data quality indicators (DQIs):

- conformance with specified holding times;
- accuracy of spiked samples within the laboratory's acceptable range (typically 70 130%) for inorganic contaminants and greater for some organic contaminants;
- field and laboratory duplicates and replicate samples will have a precision average of +/- 30% relative percentage difference (RPD) for inorganic analytes and +/- 50% RPD for organic analytes; and
- field replicates were collected at a frequency of at least 10% of all samples.

The sampling numbers adopted were based on a sampling regime which was deemed suitable for this assessment (refer Section 8.4).

The analyte selection is based on the areas of environmental concern as discussed in Section 7.

The site assessment criteria (SAC) and groundwater investigation levels (GIL) adopted from the guidelines stated in Sections 10 and 11 have risk probabilities already incorporated.

8.1.7 Optimise the Design for Obtaining Data

The sampling locations were designed to gain a general understanding of the sub-surface profile, given that there were no identified target locations prior to undertaking the fieldwork. As such, the locations were set out in a grid based pattern to provide reasonable coverage across the site (where possible). The sampling locations are presented in Drawing 1, Appendix A.

Groundwater monitoring wells were positioned so as to assess groundwater quality across the site, and to allow triangulation for the assessment of groundwater flow direction. One up gradient well (MW01) was placed in the lane way off Phillip Street, while the other two were placed on the western boundary and northern boundary adjacent to Parramatta River (MW02 and MW03).

Procedures for the collection of environmental samples were developed prior to undertaking the fieldwork, and were in accordance with Douglas Partners standard protocols, in line with OEH



guidelines and current industry practice. DP employs NATA accredited analytical laboratories to conduct sample analysis.

To optimise the selection of soil samples for analysis, soil samples were screened using a calibrated photo-ionisation detector (PID), whilst the selection of samples of sPOCAS testing was based on the results of an initial pH screen. The results of the PID readings are provided in the borehole logs in Appendix H.

Given that there were no visual indicators of soil salinity, the selection of samples for salinity and aggressivity indicator analyses was structured to essentially provide a general screen across the site (assessing horizontal trends) and with depth (assessing vertical trends).

8.1.8 Data Quality Indicators

The performance of the assessment in achieving the DQO will be assessed through the application of Data Quality Indicators (DQI), defined as follows:

- Precision: A quantitative measure of the variability (or reproducibility) of data;
- Accuracy: A quantitative measure of the closeness of reported data to the "true" value;
- Representative: The confidence (expressed qualitatively) that data are representative of each media present on site;
- **Completeness:** A measure of the amount of useable data from a data collection activity;
- **Comparability:** The confidence (expressed qualitatively) that data can be considered

equivalent for each sampling and analytical event.

Table 1 below summarises the DQIs and the procedures designed to enable achievement of the DQIs. For reference purposes, relevant sections of the report are also identified.

| DQI | Achievement Evaluation Procedure | | | | |
|--|---|--|--|--|--|
| Documentation completeness | Completion of borehole report sheets, and field and laboratory chain-of- custody (COC) documentation in Appendices H and I respectively. | | | | |
| Data completeness | The sampling density is based on DP's proposal and designed to ob preliminary information. | | | | |
| Data comparability | Use of NATA accredited laboratories, use of consistent sampling techniques (Appendix I). | | | | |
| Data representativeness | Sampling on a broad scale basis to obtain reasonably representative data (Section 9). | | | | |
| Precision and accuracy for sampling and analysis | Achievement of 30% RPD for inorganic replicate analysis and 50% for organic replicate analysis acceptable levels for laboratory QC criteria (Appendix G). | | | | |

Table 1: Data Quality Indicators



8.2 Field Quality Assurance and Quality Control

The field QC procedures for sampling, as prescribed in Douglas Partners *Field Procedures Manual* were followed during the assessment. Field QC sampling comprised replicate sampling, at a rate of approximately one replicate sample for every twenty samples. The comparative results of analysis are summarised in Appendix G.

8.3 Laboratory QA/QC

The analytical laboratory, accredited by NATA, is required to conduct in-house QA/QC procedures. These are normally incorporated into every analytical run and include reagent blanks, spike recovery, surrogate recovery and duplicate samples. These results are included in the laboratory reports in Appendix I.

The results of the DP assessment of laboratory QA/QC are shown in Appendix G, with the full laboratory reports included in Appendix I.

8.4 Sample Location and Rationale

Fieldwork was conducted between 19 and 30 September 2011. Fieldwork included drilling and soil sampling on 19, 20, 22 and 23 September, while groundwater well development and sampling was conducted on the 27 and 30 September 2011. Boreholes are referenced as BH, while groundwater wells are identified as MW.

A total of 14 boreholes were proposed to be drilled across the site in a general grid based pattern and targeting obvious areas of contamination. The NSW EPA *Sampling Design Guidelines* (1995) indicate that the sampling density for a site of 0.56 hectares is 14 sampling locations for site 'characterisation'. Two of these locations were to be placed within 333 Church Street, dependent on headroom and access constraints. Due to access constraints associated with headroom and the storage of equipment, only one location was able to be completed within the building loading dock. Therefore 13 boreholes were constructed across the site, which DP considers to still be in general accordance with the guidelines. Further sampling beneath the existing building, once demolished, is recommended for completion and verification of the findings of this investigation.

Soil samples were collected from each of the borehole locations. Selected samples were analysed for a range of analytes, as described in Section 9.7. These samples were selected based on site observations (odour, staining etc), PID readings and their position within the borehole (i.e. fill or natural).

The groundwater monitoring wells were positioned across the site in order to ascertain the inferred groundwater direction. One well was placed up gradient on the site (MW03) and two wells were placed down gradient (MW01 and MW02). Based on the groundwater levels and levels of the groundwater wells, the groundwater flow is inferred to be north to north west.

The bore and groundwater monitoring well locations are shown on Drawing 1, Appendix A.



8.5 Soil Sampling Procedures

Environmental sampling was performed according to standard procedures outlined in the DP *Field Procedures Manual.* All sampling data was recorded on DP COC sheets. The general soil sampling procedure comprised:

- Decontamination of all re-useable sampling equipment using a 3% solution of phosphate free detergent (Decon 90) and distilled water prior to collecting each sample or use of disposable sampling equipment;
- Transfer of samples into laboratory-prepared glass jars and capping immediately with Teflon lined lids;
- Collection of at least 5% replicate samples for QA/QC purposes;
- Labelling of sample containers with individual and unique identification, including project number, sample location and sample depth; and
- Placement of the sample jars and replicate sample bags into a cooled, insulated and sealed container for transport to the laboratory.

Envirolab Services Pty Ltd, accredited by NATA, was employed to conduct the primary sample analysis. SGS Laboratories was employed for secondary sample analysis. Both laboratories are required to carry out in-house QC procedures.

8.6 Groundwater Monitoring Well Construction and Sampling Details

Three groundwater monitoring wells (MW01, MW02 and MW03) were installed across the site to a maximum depth of 7.0 m bgl (MW03). MW03 was located up gradient, while MW01 and MW02 were located down gradient, towards Parramatta River. Groundwater monitoring well installation details are provided in the borehole logs (Appendix H).

The groundwater monitoring well was constructed using 50mm diameter, acid washed, class18 PVC casing and machine slotted well screen intervals. Joints were screw threaded, thereby avoiding the use of glues and solvents which may contaminate the groundwater. The well was completed with a gravel pack and, thence, a bentonite plug of at least 0.5 m thickness. The well was capped and a Gatic cover installed level with the current ground surface.

An inspection of the groundwater wells was conducted on 27 and 30 September 2011, using an electronic interface probe which confirmed the presence of water within the wells. The electronic interface probe can detect the presence of separate phase liquid in the water column (such as light non-aqueous phase liquids [LNAPL] including petroleum hydrocarbons) and determine water level. Well details are provided in Table 2 below.

| Bore ID | Location of Well | Bore Depth (m bgl) | AHD (m) | Screen Interval (m bgl) | Pre- development SWL (m bgl) | Well Volume (L) | Volume Developed (L) | Pre- purge SWL (m bgl) | Purging Method |
|------------|----------------------|-----------------------------|------------|-------------------------------|------------------------------------|-----------------------|----------------------------|------------------------------------|-------------------|
| MW01 | Northern boundary | 5.0 | 6.641 | 2.0–5.0 | 3.67 | 8.33 | 5 – dry | 3.65 | Bailer |
| MW02 | Western boundary | 7.0 | 8.504 | 4.0–7.0 | 5.05 | 13.42 | 4.5 – dry | 5.05 | Bailer |
| MW03 | Southern end | 6.0 | 8.828 | 3.0–6.0 | 5.10 | 3.64 | 2 – dry | 5.08 | Bailer |

Table 2: Groundwater Monitoring Well Details

Subsequent to installation, the groundwater monitoring wells were developed by purging until dry. The bores were allowed to stabilise for three days prior to sampling. Before sampling, the depth to groundwater was determined using the electronic interface dip-meter.

Samples were collected using a Geopump, with dedicated disposable tubing used for each well. Water quality parameters were collected as part of the process.

Groundwater samples were filtered in the field for heavy metal analysis on the same day as sampling. Sample handling and transport procedures were as set out below:

- Sample containers were labelled with individual and unique identification, including project number and sample number;
- Samples were placed in insulated containers and maintained at a temperature of approximately 4°C until transported to the analytical laboratory; and
- COC documentation was maintained at all times and countersigned by the receiving laboratory on transfer of samples.

Samples were despatched to Envirolab Services and SGS Laboratories, both NATA accredited laboratories, for analysis.

8.7 Analytical Rationale

8.7.1 Contamination Assessment

As discussed in Section 7 the identified areas of environmental concern (AEC) relate to filling, past commercial (retail) uses and the past demolition of old buildings. The analytical scheme was designed to address these AEC, through the following targets:

Imported filling:Heavy Metals, TPH, BTEX, PAH, OCP, OPP, PCB, Phenols, AsbestosFormer buildings:Lead, AsbestosCommercial use:Heavy Metals, TPH, BTEX, PAH, VOC

The analytical scheme adopted is presented in Table 3 for soil and Table 4 for groundwater.



| Sample ID | Heavy Metals | BTEX/ TPH | OCP/ OPP | PCB | РАН | Phenol | Asbestos | VOC |
|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW01/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| MW01/2.5-2.6 | \checkmark | \checkmark | | | \checkmark | | | |
| MW02/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | | \checkmark | \checkmark |
| Dup02 dup of | | al | | | | | | |
| MW02/0.5-0.6 | v | N | | | N | | | |
| MW02/1.0-1.1 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | | \checkmark | |
| MW03/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH01/0.2-0.3 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH01/0.5-0.6 | | | | | | | | |
| BH01/1.0-1.1 | \checkmark | \checkmark | | | \checkmark | | | |
| Dup08 dup of | | al | | | | | | |
| BH01/1.0-1.1 | v | N | | | N | | | |
| BH02/0.4-0.5 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH02/1.0-1.1 | \checkmark | \checkmark | | | \checkmark | | | |
| BH03/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH04/1.0-1.1 | \checkmark | \checkmark | | | \checkmark | | | |
| BH05/0.4-0.5 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH06/0.2-0.3 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH07/0.8-1.0 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH08/0.1-0.2 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| Dup04 dup of | al | ما | | | 2 | | | |
| BH08/0.1-0.2 | v | v | | | v | | | |
| BH09/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH09/1.0-1.1 | \checkmark | \checkmark | | | \checkmark | | | |
| BH10/0.5-0.6 | | | | | \checkmark | | | |
| BH10/1.0-1.1 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH10/1.7-1.8 | | | \checkmark | | \checkmark | | | |

Table 3: Analytical Scheme for Soil

Table 4: Analytical Scheme for Groundwater

| Sample ID | Heavy Metals | BTEX/ TPH | ОСР | РСВ | РАН | VOC | Hardness |
|--------------|-----------------|--------------|--------------|--------------|--------------|--------------|--------------|
| MW01 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| MW02 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| MW03 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| Dup01 | \checkmark | \checkmark | | | | | |

8.7.2 Salinity and Aggressivity Assessment

The analytical scheme for the salinity and aggressivity assessment was designed to obtain an indication of the potential presence and severity of saline and/or aggressive soils across the site. This was achieved through analysing a selection of samples (spaced across the site and at various depths) for indicator parameters including electrical conductivity (EC1:5), pH, chloride, sulphate, and Exchangeable Sodium (ES). The analytical scheme adopted is presented in Table 5 below.



| Sample ID | pH | EC | Chloride | Sulphate | ESP |
|--------------|--------------|--------------|--------------|--------------|--------------|
| MW01/0.5-0.6 | \checkmark | \checkmark | \checkmark | | \checkmark |
| MW01/2.0-2.1 | \checkmark | \checkmark | | | |
| MW02/1.0-1.1 | \checkmark | \checkmark | | | |
| MW03/0.5-0.6 | \checkmark | \checkmark | | | |
| BH1/0.5-0.6 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH3/1.0-1.1 | \checkmark | \checkmark | \checkmark | \checkmark | |
| BH4/1.5-1.6 | \checkmark | \checkmark | | | |
| BH5/0.4-0.5 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH6/1.1-1.2 | \checkmark | \checkmark | | | |
| BH7/0.8-1.0 | \checkmark | \checkmark | | | |
| BH8/0.3-0.4 | \checkmark | \checkmark | | | |
| BH8/2.0-2.1 | \checkmark | \checkmark | \checkmark | \checkmark | \checkmark |
| BH9/1.0-1.1 | | \checkmark | | | |
| BH10/0.5-0.6 | | \checkmark | | | |
| BH10/1.7-1.8 | | \checkmark | \checkmark | | |

Table 5: Analytical Scheme (Salinity)

8.7.3 Acid Sulphate Soil Assessment

Acid sulphate soils are commonly associated with sedimentary deposits, such as those associated with creeks, rivers and other water bodies. As such, should acid sulphate soils be present at the site they would most likely be prevalent closest to the river banks. As there was no practical access for a drilling rig in close proximity to Parramatta River, the closest of the bores to the river banks were selected for pH screening.

On the basis of the pH testing, selected 'worst case' samples were submitted to Envirolab for SPOCAS (Peroxide Oxidation Combined Acidity and Sulphate) testing.

The following Table 6 lists the samples that were pH screened and analysed for sPOCAS.



| Sample ID | pH Screening | sPOCAS |
|--------------|--------------|--------------|
| MW01/0.5-0.6 | | |
| MW01/1.0-1.2 | | |
| MW01/1.5-1.6 | | |
| MW01/2.0-2.1 | | |
| MW01/2.5-2.6 | | |
| MW01/3.0-3.1 | | |
| MW01/4.0-4.1 | \checkmark | \checkmark |
| MW02/0.5-0.6 | | |
| MW02/1.0-1.1 | | |
| MW02/1.5-1.6 | | |
| MW02/2.0-2.1 | | |
| MW02/2.5-2.6 | | |
| MW02/3.0-3.1 | | |
| MW02/4.0-4.1 | | |
| MW02/5.0-5.1 | | |

 Table 6: pH Screening and Analytical Scheme (ASS)

9. Site Assessment Criteria

9.1 Contamination Assessment

The proposed development of site includes a residential component in the form of apartments. Part of the site will also be used for retail and general public access. As a result, the soil analytical data is compared to the health based investigation levels (HILs) for residential development with minimal soil access (HIL D) and parks and recreational open space (HIL C), sourced from the DEC publication *Guidelines for the NSW Site Auditor Scheme* (2006), Appendix II. These HILs are adopted as the primary site assessment criteria (SAC).

In the absence of available HILs, the following SAC are adopted:

- For TPH and BTEX, the threshold concentrations for sensitive land uses, sourced from the NSW EPA *Guidelines for Assessing Service Station Sites* (1994); and
- For asbestos, in the absence of a current acceptance criteria, the SAC is no visible asbestos fragments and no asbestos fibres in soil.

The adopted SAC are listed on the following Table 7.



| Contaminant | SAC (mg/kg) | | Rationale |
|----------------------------------|--|--------|--|
| TPH ^a | | | |
| $C_{6} - C_{9}$ | 65 | | |
| $C_{10} - C_{36}$ | 1000 | | A NSW EPA (now OEH) Contaminated |
| BTEX ^a | | | sites Guidelines for assessing service |
| Benzene | | 1 | concentrations for sensitive land use- |
| Toluene | 1.4 | | soils. |
| Ethylbenzene | 3 | .1 | |
| Xylene | 1 | 4 | |
| Matala | HIL D | HIL C | |
| | 400 | 200 | |
| | 80 | 40 | |
| Cadmium | 48% | 24% | |
| Chromium | 4,000 | 2,000 | |
| Copper | 1200 | 600 | |
| Lead | 60 | 30 | |
| Mercury | 2400 | 1200 | NSW DEC (now OEH) Contaminated |
| Nickel | 28,000 | 14,000 | sites Guidelines for the NSW Site Auditor |
| Zinc | 34,000 | 17,000 | Scheme (2 nd Edition) (2006) Appendix II, |
| Total Phenols | 80 | 40 | redevelopment sites in NSW Health- |
| РАН | | | based investigation levels for residential |
| Total | 4 | 2 | (HIL D) and parks and recreational open |
| Benzo(a)Pyrene | 80 | 40 | space (HIL C) |
| РСВ | 40 | 20 | |
| OCP | | | |
| Aldrin + dieldrin | | | |
| Chlordane | 40 | 20 | |
| DDT (including DDD, DDE, DDT) | 200 | 100 | |
| Heptachlor | 800 | 400 | |
| Asbestos | No asbestos fragments and no asbestos fibres in soil | | Current industry approach |

Table 7: Site Acceptance Criteria for Soil

For analytes in which there are no listed SAC (e.g. OPP and VOC), the laboratory PQL will be taken as the trigger level, above which further assessment will be required.


9.2 Salinity and Aggressivity Assessment

Soil salinity is often assessed with respect to electrical conductivity of a 1:5 soil:water extract (EC 1:5). This value can be converted to ECe (electrical conductivity of a saturated extract) by multiplication with a factor dependent of soil texture ranging from 6 - 17 depending on soil type. Richards (1954) and Hazelton and Murphy (1992) classify soil salinity on the basis of ECe, and describe the implications of the salinity classes on agriculture as summarised in Table 8.

Table 8: Soil Salinity Classification

| Class | ECe (dS/m) | Implication |
|-------------------|------------|---|
| Non-Saline | <2 | Salinity effects mostly negligible |
| Slightly Saline | 2 – 4 | Yields of sensitive crops affected |
| Moderately Saline | 4 – 8 | Yields of many crops affected |
| Very Saline | 8 – 16 | Only tolerant crops yield satisfactorily |
| Highly Saline | >16 | Only a few very tolerant crops yield satisfactorily |

Note: This classification scheme is based on agricultural sensitivity. At this point in time, no structure-based classification system exists.

The classification of soil aggressivity has been based on AS 2159 – 2009 *Piling Design and Installation* and relevant exposure classifications are summarised in Tables 9 and 10.

| Table 9: | Exposure | Classification | for | Concrete | Piles |
|----------|----------|----------------|-----|----------|-------|
|----------|----------|----------------|-----|----------|-------|

| Ex | posure conc | litions | Exposure Classification (Aggressivity) |
|---------------------------------|-------------|-----------------------------|---|
| Sulfates SO ₃ ppm | рН | Chlorides ppm (in water) | Soil conditions – B (relatively low permeability soils above groundwater) |
| 4000 | >5.5 | <6000 | Non-aggressive |
| 4000 - 8000 | 4.5 – 5.5 | 6000 – 12000 | Mild |
| 8000 – 16000 | 4 – 4.5 | 12000 – 30000 | Moderate |
| >16000 | <4 | >30000 | Severe |

| E | posure con | ditions | Exposure Classification (Aggressivity) |
|----------------------------|------------|-----------------------|---|
| Chlorides in Soil (ppm) | рН | Resistivity Ohm-cm | Soil conditions – B (relatively low permeability soils above groundwater) |
| <5000 | >5 | >5000 | Non-aggressive |
| 5000 – 20000 | 4 - 5 | 2000-5000 | Non-aggressive |
| 20000 – 50000 | 3 - 4 | 1000-2000 | Mild |
| >50000 | <3 | <1000 | Moderate |

Table 10: Exposure Classification for Steel Piles

The sodicity of soil (proportion of exchangeable sodium cations as a percentage of total exchangeable cations) can be elevated due to salt content and can affect properties such as dispersion, erodibility and permeability. Sodic soils may be affected by very severe surface crusting, very low infiltration and hydraulic conductivity, very hard and dense subsoils, high susceptibility to gully erosion and tunnel erosion. Sodicity also affects the shrink-swell properties of a soil. The general rating of sodicity (after McNally, 2005) is given in Table 11.

Table 11 – Sodicity Rating

| ESP% | Rating |
|--------|--------------|
| <5 | Non-sodic |
| 5 – 15 | Sodic |
| >15 | Highly sodic |

9.3 Acid Sulphate Soils

Acid Sulphate Soils (ASS) are naturally occurring sediments containing iron sulphides, primarily pyrite, commonly deposited in estuarine environments. The occurrence of ASS is associated with areas or regions that have previously been or are currently estuarine environments. Due to changes in sea level or geomorphologic changes to the coastal systems, these sediments are often overlaid by terrestrial sediments.

When ASS are exposed to air (e.g. due to bulk excavation or dewatering), the oxygen reacts with iron sulphides in the sediment, producing sulphuric acid. This acid can be produced in large quantities and is highly mobile in water. The sulphuric acid can drain into waterways causing severe short and long term socio-economic and environmental impacts, including damage to man made structures and natural ecosystems.



ASS can either be classified as 'actual acid sulphate soils' (AASS) which are soils that have already reacted with oxygen to produce acid, or 'potential acid sulphate soils' (PASS). PASS are soils containing iron sulphide that have not been exposed to oxygen (e.g. soils below the water table). PASS therefore have not produced sulphuric acid, but have the potential to do so if exposure to oxygen occurs.

In New South Wales, development occurring in acid sulphate soils is governed and managed by Local Environmental Plans, the Acid Sulphate Soils Management Advisory Committee Planning Guidelines and the Acid Sulphate Soils Manual developed by the Acid Sulphate Soils Management Advisory Committee (ASSMAC).

Samples were screened prior to laboratory analysis to assess for the possible presence of actual acid sulphate soil (AASS) or potential acid sulphate soil (PASS). These results were compared against the NSW Acid Sulphate Soils Management Advisory Committee (ASSMAC) *Acid Sulphate Soils Assessment Guidelines* (1998) guidance indicators, namely:

- pH_F ≤ 4 strongly indicates oxidation has occurred in the past and that AASS are likely to be present;
- pH_{FOX} < 3.5 (but preferably pHFOX <3), plus preferably one or more of a pH_{FOX} reading at least one pH unit below the corresponding pH_F, a strong reaction with peroxide, change in soil colour from grey tones to brown tones or release of sulphurous gases, strongly indicates the presence of PASS.

On the basis of the pH testing, selected 'worst case' samples were submitted to Envirolab for SPOCAS (Peroxide Oxidation Combined Acidity and Sulphate) testing. The results of analysis are summarised in Table 1 and compared with action criteria specified in ASSMAC *Acid Sulphate Soils Assessment Guidelines* (1998).

10. Groundwater Investigation Levels

The levels of contaminants in groundwater were assessed against Groundwater Investigation Levels (GILs) adopted from applicable guidelines, specifically, the ANZECC (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. As the receiving body for groundwater at the site is likely to be a marine water body (i.e. Parramatta River leads to Botany Bay and the Tasman Sea), the trigger values (where available) for the protection of 95% of marine water species, as stipulated in the ANZECC (2000), were considered relevant.

Given that no drinking water bores were registered in close proximity to the site (i.e. through the registered bore search) and the region surrounding the site is mixed residential / commercial, it is considered unlikely that the regional groundwater would be used for drinking purposes. Use of the groundwater for industrial purposes is considered a possibility, however, the threshold levels applicable to this use are typically higher than for other beneficial uses. On this basis, the Trigger Values (where available) for the protection of 95% of marine water species were adopted as the primary GILs.

The Airports (Environment Protection Regulations) criteria have been adopted for TPH $C_6 - C_{36}$ contaminants, due to the absence of high reliability NSW EPA or ANZECC Guidelines for TPH.



The levels of contaminants in the groundwater are assessed against the GILs shown in Table 12.

| Contaminant | Adopted Criteria (GIL, µg/L) | Source |
|--------------------|---------------------------------|---|
| ТРН | | Airport (Environment Protection Regulations (1997), Schedule 2 Water Pollution Accepted Limits: Table 1.03 |
| $C_{6} - C_{9}$ | 150 | Accepted limits of contamination have been adopted as |
| >C ₉ | 600 | screening thresholds [adopted due to the absence of high reliability NSW EPA or ANZECC guidelines for TPH]* |
| BTEX | | |
| Benzene | 300 | NSW EPA Contaminated Sites Guidelines for Assessing |
| Toluene | 300 | Service Station Sites (1994) Threshold concentrations for |
| Ethylbenzene | 140 | sensitive land use. |
| Xylene | 380 | |
| Metals | | |
| Arsenic (III) | 2.3 | ANZECC (2000) Australian Water Quality Guidelines |
| Cadmium | 5.5 | for the protection of 95% of marine water species |
| Chromium | 4.4 ¹ | |
| Copper | 1.3 | |
| Lead | 4.4 | |
| Mercury | 0.4 | |
| Nickel | 70 | |
| Zinc | 15 | |
| OCP | | |
| Heptachlor | 0.00042 | |
| Aldrin | 0.0004 | |
| Lindane | 0.003 | |
| Chlordane (trans + | 0.001^2 | |
| cis) | 0.001 | |
| Dieldrin | 0.005^2 | |
| DDE | 0.00042 | |
| DDT | 0.0004 | |
| Endrin | 0.000^{2} | |
| alpha Endosulphan | 0.0002 | |
| beta Endosulphan | 0.007 | |
| Methoxychlor | 0.004 | |

Table 12: Groundwater Investigation Levels



| Contaminant | Adopted Criteria (GIL, µg/L) | |
|-------------------|---------------------------------|---|
| PCB | | |
| Arochlor 1016 | 0.009 ² | |
| Arochlor 1221 | 1 ² | |
| Arochlor 1232 | 0.3 ² | 1 |
| Arochlor 1242 | 0.6 ² | |
| Arochlor 1248 | 0.03 ² | |
| Arochlor 1254 | 0.03 ² | |
| Arochlor 1260 | 25 ² | |
| Phenols | | |
| Phenol | 400 | |
| Pentachlorophenol | 22 | |
| PAH | | |
| Total | Not specified | |
| Benzo(a)pyrene | 0.1 ² | |
| Naphthalene | 70 | |
| Anthracene | 0.01 ² | |
| Phenanthracene | 0.6 ² | |
| Fluoranthene | 1 ² | |

Notes:

* Other than a 'low reliability' final chronic value of 7µg/L for petroleum hydrocarbon, which is not routinely achievable by NATA laboratories due to inability to meet the required detection limits.

1 Low reliability trigger value for chromium (III) (Section 8.3.7 of ANZECC 2000)

2 Low reliability trigger value (Section 8.3.7 of ANZECC 2000). Insufficient data for reliable trigger value. Interim working value or low reliability value used for screening purposes.

The laboratory practical quantitation limits (PQL) are taken as the initial screening level for VOCs. Should there be detected concentrations of VOC, then ANZECC, 2000 low reliability trigger values will be used (where available). In the absence of such trigger levels, appropriate national or international guidelines will be referenced.

11. Results

11.1 Field Observations – Soil

Fill was observed at all bore locations to a maximum depth of 2.5 m bgl (MW01). Fill across the site comprised generally of silty sandy fill with roadbase gravel, trace brick fragments, and specific finds of pottery (BH105), asbestos cement pipe and fragments (BH107). Ash was noted in soil from BH102, BH103, BH106, BH107, BH110 and MW101. A burnt out area (possibly fire effected) was observed BH110 at 1.9 m. No odour was observed from any of the samples.



Natural soil was encountered underlying the fill and was noted to comprise mainly orange brown or yellow silty sand.

Reference should be made to the bore logs in Appendix H.

11.2 Soil Field Testing Results

Replicate samples were collected in plastic bags, and were allowed to equilibrate under ambient temperatures before screening for Total Photoionisable Compounds (TOPIC), using a calibrated Photoionisation Detector (PID). Results of the samples screening indicated that all samples had concentrations below 1 ppm. The low readings collected are indicative of Australian soil background levels, and do not indicate the presence of TOPIC.

11.3 Field Observations – Groundwater

Groundwater levels were measured prior to purging on 26 and 30 September 2011. The well depths and depth to groundwater are listed in Table 2, Section 9.6. No free phase product was detected by the interface dip-meter during sampling. At the time of purging, no odour was observed in the groundwater.

11.4 pH Screening

The pH screening results are used for indicative purposes only and no firm criteria are applicable. General comparative values for pH screening are provided by ASSMAC, however it is noted that these may provide a false indication due to potential presence of inclusions in the soil (e.g. organic matter, shells) that may affect the pH values. In general, however, a substantial drop in pH value typically suggests elevated potential for presence of ASS.

The pH_F (distilled water) values for the screened samples ranged between 8.1 and 10.2 (all greater than 4), whilst the pH_{FOX} (oxidised) values ranged between 5.7 and 10.1 (all greater than 3.5). As such the pH screening provided no real indicators of AASS or PASS.

11.5 Laboratory Results

The laboratory results are summarised in the following Tables 13 (soil contamination), 14 (groundwater contamination) and 15 (salinity and aggressivity). The NATA accredited full laboratory certificates are provided in Appendix I.



Table 13: Results of Soil Analysis (All results in mg/kg unless otherwise stated)

| | | | | | Heavy | Metals | | | | Poly Aro Hydro (P | cyclic matic carbons AH) | Total Pe Hydroc (TF | etroleum arbons PH) | Mo Hyc | nocycli Irocarb | c Arom ons (BT | atic EX) | Pesticides | us Pesticides | | olics | | |
|---|--|---------|----------|-----------------------|----------|--------|---------|--------|-------|----------------------------|--|---------------------------|---|-----------|--------------------|-------------------|--------------|---|---|---|-------------|---|--|
| Sample ID | Sampling Date | Arsenic | Cadmium | Chromium ⁴ | Copper | Lead | Mercury | Nickel | Zinc | Benzo (a) pyrene | Total PAH ⁵ | 6 2- 93 | C10-C36 | Benzene | Toluene | Ethyl- benzene | Total Xylene | Organochlorine I (OCP) ⁷ | Organophosphorol (OPP) | PCB ⁷ | Total Pheno | VOC | Asbestos |
| 72628.00 - 12-14 | Phillip and 3 | 33 Chu | rch Stre | ets, Par | rramatta | | | | 1 | I | | | 1 | 1 | | | | 1 | | | | 1 | |
| MW01/0.5-0.6 | 19/09/2011 | 4 | 10 | 120 | 240 | 150 | 0.7 | 100 | 160 | 1.0 | 16.0 | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos. trace respirable fibres detected</td></pql<></td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos. trace respirable fibres detected</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos. trace respirable fibres detected</td></pql<></td></pql<> | <5.0 | <pql< td=""><td>chrysotile & amosite asbestos. trace respirable fibres detected</td></pql<> | chrysotile & amosite asbestos. trace respirable fibres detected |
| MW01/2.5-2.6 | 19/09/2011 | <4 | <0.5 | 6 | 9 | 51 | 0.2 | 4 | 46 | 0.25 | 3.15 | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| MW02/0.5-0.6 | 19/09/2011 | <4 | <0.5 | 3 | 3 | 4 | <0.1 | 3 | 5 | 0.08 | 0.68 | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<> | <5.0 | <pql< td=""><td>NAD</td></pql<> | NAD |
| Dup02 | 19/09/2011 | <4 | <0.5 | 4 | 3 | 11 | <0.1 | 2 | 9 | < 0.05 | <pql< td=""><td><25</td><td><250</td><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| MW02/1.0-1.1 | 19/09/2011 | <4 | <0.5 | 2 | 3 | 5 | <0.1 | 2 | 5 | < 0.05 | <pql< td=""><td><25</td><td><250</td><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<> | <5.0 | - | NAD |
| MW03/0.5-0.6 | 20/09/2011 | <4 | <0.5 | 54 | 24 | 71 | 0.3 | 14 | 100 | <0.05 | <pql< td=""><td><25</td><td><250</td><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<> | <5.0 | <pql< td=""><td>NAD</td></pql<> | NAD |
| BH01/0.2-0.3 | 23/09/2011 | <4.0 | <0.5 | 150 | 34 | 6 | <0.1 | 120 | 63 | < 0.05 | 0.2 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td><pql< td=""><td>NAD</td></pql<></td></pql<> | <5.0 | <pql< td=""><td>NAD</td></pql<> | NAD |
| BH01/1.0-1.1 | 23/09/2011 | <4.0 | <0.5 | 8 | 6 | 9 | <0.1 | 4 | 12 | < 0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| Dup08 | 23/09/2011 | <4.0 | <0.5 | 8 | 6 | 9 | <0.1 | 4 | 11 | < 0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| BH02/0.4-0.5 | 23/09/2011 | <4.0 | <0.5 | 4 | 3 | 7 | <0.1 | 2 | 7 | < 0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<> | <5.0 | | NAD |
| BH02/1.0-1.1 | 23/09/2011 | <4.0 | <0.5 | 5 | 3 | 5 | <0.1 | 2 | 7 | < 0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| BH03/0.5-0.6 | 22/09/2011 | <4.0 | <0.5 | 4 | 8 | 39 | 0.1 | 3 | 12 | <0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<> | <5.0 | | NAD |
| BH04/1.0-1.1 | 22/09/2011 | <4.0 | <0.5 | 1 | 2 | 2 | <0.1 | <1.0 | 4 | < 0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| BH05/0.4-0.5 | 22/09/2011 | 10 | 1.9 | 16 | 58 | 630 | 2.3 | 9 | 1300 | 0.54 | 4.54 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<> | <5.0 | | NAD |
| BH06/0.2-0.3 | 23/09/2011 | 5 | 0.5 | 12 | 34 | 510 | 0.4 | 6 | 220 | 0.11 | 0.31 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td></td><td>NAD</td></pql<> | <5.0 | | NAD |
| BH07/0.8-1.0 | 22/09/2011 | 6 | 4 | 26 | 1500 | 220 | 0.2 | 92 | 460 | 0.23 | 2.73 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos</td></pql<></td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td><pql< td=""><td>chrysotile & amosite asbestos</td></pql<></td></pql<> | <5.0 | <pql< td=""><td>chrysotile & amosite asbestos</td></pql<> | chrysotile & amosite asbestos |
| BH08/0.1-0.2 | 22/09/2011 | <4.0 | <0.5 | 140 | 32 | 6 | <0.1 | 120 | 62 | <0.05 | 0.2 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<> | <5.0 | - | NAD |
| Dup04 | 22/09/2011 | <3 | 0.6 | 120 | 29 | 6 | <0.05 | 110 | 78 | <0.1 | 1.1 | <20 | <120 | <0.1 | <0.1 | <0.1 | <0.2 | - | - | - | - | - | - |
| BH09/0.5-0.6 | 23/09/2011 | <4.0 | <0.5 | 5 | 4 | 1 | <0.1 | 3 | / | <0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<> | <pql< td=""><td><pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td><5.0</td><td>-</td><td>NAD</td></pql<> | <5.0 | - | NAD |
| BH09/1.0-1.1 | 23/09/2011 | <4.0 | <0.5 | 3 | 2 | 4 | <0.1 | 2 | 5 | <0.05 | <pql< td=""><td><25</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<></td></pql<> | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | - |
| BH10/0.5-0.6 | 23/09/2011 | <4.0 | <0.5 | 13 | 1 | 62 | 0.2 | 2 | 31 | 0.27 | 2.87 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | - | - | - | - | - | |
| BH10/1.0-1.1 | 23/09/2011 | <4.0 | <0.5 | 0 | <1.0 | 4 | <0.1 | 1 | 1 | <0.05 | <pql< td=""><td><20</td><td><pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td></td><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<></td></pql<> | <20 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td><td><pql< td=""><td><pql< td=""><td></td><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<></td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | <pql< td=""><td><pql< td=""><td></td><td><5.0</td><td>-</td><td>NAD</td></pql<></td></pql<> | <pql< td=""><td></td><td><5.0</td><td>-</td><td>NAD</td></pql<> | | <5.0 | - | NAD |
| TR1 | 23/09/2011 | 4 | <0.5 | 14 | 14 | 20 | <0.1 | 5 | 10 | <0.05 | < F QL | <25 | | <0.2 | <0.5 | <1.0 | <2.0 | | | | <3.0 | | NAD |
| TS1 | 22/09/2011 | - | | - | | | | | | | - | -25 | - | 104% | 104% | 107% | 107% | - | - | | - | - | |
| TR2 | 23/09/2011 | | - | | | | | | - | | | <25 | - | <0.2 | <0.5 | <10 | <20 | - | - | - | - | _ | |
| TS2 | 23/09/2011 | - | - | - | - | - | - | - | - | - | - | - | - | 105% | 105% | 102% | 102% | - | - | - | - | - | - |
| | | | 1 | | 1 | | | | 1 | 1 | | | 1 | | | | | 1 | | | | 1 | |
| PQL | | 4 | 0.5 | 1 | 1 | 1 | 0.1 | 1 | 1 | 0.05 | 0.1 | 25 | 250 | 0.5 | 0.5 | 1 | 3 | 0.1 | 0.1 | 1 | 5 | 1 | - |
| Site Assessment | t Criteria (SA | C) | I | | | | | | r | I | | | 1 | 1 | 1 | | | 1 | | | | | |
| HIL D for Reside Minimal Access | ntial with Landuse ¹ | 400 | 80 | 48% | 4000 | 1200 | 60 | 2400 | 28000 | 4 | 80 | 65 | 1000 | 1 | 1.4/130 | 3.1/50 | 14/25 | 40/200/800/40 ⁶ | - | 40 | 80 | - | nil |
| HIL C for parks, open space ar fields, including schools lan | recreational nd playing J secondary nd use ² | 200 | 40 | 200 | 2000 | 600 | 30 | 600 | 14000 | 2 | 40 | - | - | - | - | - | - | 20/100/400/20 ⁶ | - | - | 40 | - | NAG |
| NSW EPA Serv Guidelin | ice Station nes ³ | - | - | - | - | - | - | - | - | - | - | 65 | 1000 | 1 | 1.4 | 3.1 | 14 | - | - | - | - | - | NAG |

Notes

7

NSW DEC Contaminated Sites: Guidelines for the NSW Site Auditors Scheme 2nd edition, 2006. Health-based guidelines for residential with minimal access land use (Column D) 1

NSW DEC Contaminated Sites: Guidelines for the NSW Site Auditors Scheme 2nd edition, 2006. Health-based guidelines for recreational open space and playing fields, including secondary schools land use (Column D) 2 NSW EPA (1994) Contaminated Sites Guidelines for Assessing Service Station Sites threshold concentrations for sensitive land use 3

All Chromium are assumed to exist in the stable Cr(III) oxidation state, as Cr(VI) will be too reactive and unstable under the normal environment

4 All PQLs are 0.1, with the exception of benzo(b+k)fluoranthene where PQL is 0.2 5

Aldrin+Dieldrin/Chlordane/DDD+DDE+DDT/Heptachlor 6

ANZECC/NHMRC (1992) Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites, Environmental Soil Quality Guidelines Background A [ANZECC A];

Not Tested

NAG No Asbestos Detected at the reporting limit of 0.1g/kg

Table 14: Results of Groundwater Analysis (All results in µg/L unless otherwise stated)

| Sample ID Sampling Date 72628.00 - 12-14 Phillip and 333 | | | | Heavy | Metals ⁴ | | | | Polycyclic Aromatic Hydrocarbons (PAH) ⁴ | | | Control Contro | | Monocyclic Aromatic Hydrocarbons (BTEX) | | itic EX) | Organochlorine Pesticides (OCP) ⁴ | | | | | | | PCB ⁴ | | | | | | | Hardness | | | | | | | |
|--|-----------------------------|---------|-----------------------|----------|---------------------|---------|--------|------|--|------------|------------------------|--|------------------|--|------------------|-------------------|--|------------------|---------|---------|--------------------------|----------|-------|------------------|---------|----------------------|---------------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|------|---------------------------------|------|
| | Arsenic | Cadmium | Chromium ¹ | Copper | Lead | Mercury | Nickel | Zinc | Benzo (a) pyrene | Napthalene | Total PAH ² | C6-C9 | C10-C36 | Benzene | Toluene | Ethyl- benzene | Total Xylene | Heptachlor | Aldrin | Lindane | Chlordane trans + cis | dieldrin | DDE | DDT | Endrin | alpha Endosulphan | beta Endosulphan | Methoxychlor | Arochlor 1016 | Arochlor 1221 | Arochlor 1232 | Arochlor 1242 | Arochlor 1248 | Arochlor 1254 | Arochlor 1260 | VOC | mgCaCO ₃ /L | |
| 72628.00 - 12-14 | Phillip and 3 | 33 Chur | ch Stree | ts, Pari | ramatta | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MW01 | 30/09/2011 | 2 | <0.1 | 2 | 4 | <1 | 0.1 | 2 | 14 | <1 | <1 | <pql< td=""><td><10</td><td><250</td><td><1</td><td><1</td><td><1</td><td><2</td><td><0.2</td><td><0.2</td><td>-</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><pql< td=""><td>130</td></pql<></td></pql<> | <10 | <250 | <1 | <1 | <1 | <2 | <0.2 | <0.2 | - | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <pql< td=""><td>130</td></pql<> | 130 |
| MW02 | 30/09/2011 | <1 | <0.1 | 1 | 3 | <1 | <0.1 | 1 | 9 | <1 | <1 | <pql< td=""><td><10</td><td><250</td><td><1</td><td><1</td><td><1</td><td><2</td><td><0.2</td><td><0.2</td><td>-</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><pql< td=""><td>110</td></pql<></td></pql<> | <10 | <250 | <1 | <1 | <1 | <2 | <0.2 | <0.2 | - | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <pql< td=""><td>110</td></pql<> | 110 |
| Dup01 | 30/09/2011 | <1 | <0.1 | <1 | <1 | <1 | <0.1 | <1 | 4 | - | - | - | <10 | <250 | <1 | <1 | <1 | <2 | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - | - |
| MW03 | 30/09/2011 | <1 | <0.1 | 4 | 2 | <1 | <0.1 | 3 | 6 | <1 | <1 | <pql< td=""><td><10</td><td><250</td><td><1</td><td><1</td><td><1</td><td><2</td><td><0.2</td><td><0.2</td><td>-</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><0.2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><2</td><td><pql< td=""><td>140</td></pql<></td></pql<> | <10 | <250 | <1 | <1 | <1 | <2 | <0.2 | <0.2 | - | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <0.2 | <2 | <2 | <2 | <2 | <2 | <2 | <2 | <pql< td=""><td>140</td></pql<> | 140 |
| | | | | | | | | | | • | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| PQL | | 1 | 0.1 | 1 | 1 | 1 | 0.1 | 1 | 1 | 0.1 | 0.1 | 0.1 | 10 | 250 | 1 | 1 | 1 | 2 | 0.001 | 0.001 | 0.001 | 0.002 | 0.002 | 0.001 | 0.001 | 0.002 | 0.002 | 0.002 | 0.1 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 0.01 | 1 | 0.05 |
| Trigger Values Water GIL Level of Pro | - Marine 95% otection | 2.3 | 5.5 | 4.4 | 1.3 | 4.4 | 0.4 | 70 | 15 | 0.1 | 70 | NA | 150 ² | 600 ² | 300 ³ | 300 ³ | 140 ³ | 380 ³ | 0.0004* | 0.003* | 0.007* | 0.001* | 0.01* | 0.0005* | 0.0004* | 0.008 | 0.0002* | 0.007* | 0.004* | 0.009* | 1* | 0.3* | 0.6* | 0.03* | 0.03* | 25* | 0.3* | NA |

Notes

Low reliability trigger value (section 8.3.7 of ANZECC 2000). Insufficient data for reliable trigger value. Interim working value used for screening purposes. Low reliability trigger value (section 8.3.7 of ANZECC 2000) for chromium III *

1

2 Airport (Environment Protection) Regulations (1997), Schedule 2 Water Pollution Accepted Limits: Table 1.03 - Accepted Limits of contamination.

NSW EPA Contaminated Sites *Guidelines for Assessing Service Station Sites* (1994), threshold concentrations for sensitive land use. ANZECC (2000) *Australian Water Quality Guidelines* for the protection of 95% of marine water species. 3

4

-Not Tested

NA Not Applicable

BOLD Exceedence of Groundwater Investigation Level (GIL)



| Bore | Sample | рН | Chloride | Sulphate | Aggre | ssivity | ESP | Sodicity | Soil Texture Group | Textural | EC _{1:5} | EC _e | Salinity Class |
|------|---------|------|----------|-----------------|----------------|----------------|-----|-----------|--------------------|------------|--------------------------|--------------------------|-------------------|
| | Depth | | | SO ₄ | To Concrete | To Steel | | Class | | Factor [M] | [Lab.] | [M x EC _{1:5}] | |
| | (m) | | (ppm) | (ppm) | [AS2 | 159] | (%) | | | [DLWC] | (µS/cm) | (dS/m) | [Richards 1954] |
| | | | | | | | | | | | | | |
| MW1 | 0.5-0.6 | 9.8 | 28 | 310 | Non-Aggressive | Non-Aggressive | 2.9 | non sodic | Loam | 10 | 310 | 3.1 | Slightly Saline |
| | 2.0-2.1 | 9.5 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 620 | 6.2 | Moderately Saline |
| MW2 | 1.0-1.1 | 9.0 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 80 | 0.8 | Non Saline |
| MW3 | 0.5-0.6 | 9.5 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 240 | 2.4 | Slightly Saline |
| | | | | | | | | | | | | | |
| BH1 | 0.5-0.6 | 8.2 | 17 | 23 | Non-Aggressive | Non-Aggressive | 3 | non sodic | Clay loam | 9 | 86 | 0.8 | Non Saline |
| BH3 | 1.0-1.1 | 8.2 | 3 | 22 | Non-Aggressive | Non-Aggressive | NT | - | Clay loam | 9 | 49 | 0.4 | Non Saline |
| BH4 | 1.5-1.6 | 7.4 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 30 | 0.3 | Non Saline |
| BH5 | 0.4-0.5 | 8.0 | 6 | 17 | Non-Aggressive | Non-Aggressive | <1 | non sodic | Loam | 10 | 100 | 1.0 | Non Saline |
| BH6 | 1.1-1.2 | 7.7 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Sandy loam | 14 | 48 | 0.7 | Non Saline |
| BH7 | 0.8-1.0 | 10.6 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 460 | 4.6 | Moderately Saline |
| | | | | | | | | | | | | | |
| BH8 | 0.3-0.4 | 6.9 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 340 | 3.4 | Slightly Saline |
| | 2.0-2.1 | 4.7 | 16 | 190 | Mild | Non-Aggressive | 1.3 | non sodic | Sandy loam | 14 | 190 | 2.7 | Slightly Saline |
| BH9 | 1.0-1.1 | 7.9 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 42 | 0.4 | Non Saline |
| | | | | | | 00 | | | | | | | |
| BH10 | 0.5-0.6 | 6.9 | NT | NT | Non-Aggressive | Non-Aggressive | NT | - | Loam | 10 | 180 | 1.8 | Non Saline |
| | 1.7-1.8 | 7.3 | 13 | 71 | Non-Aggressive | Non-Aggressive | NT | - | Light medium clay | 8 | 130 | 1.0 | Non Saline |
| | | | | | | | | | | | | | |

ESP = Exchangeable Sodium Percentage (sodicity)

EC_{1.5}= Electrical Conductivity (!:5 Soil/Water suspension)

M = Multiplier factor based on soil texture

 $EC_e = Electrical Conductivity = EC_{1.5} * M$

NT = Not Tested



12. Discussion

12.1 Soil Investigation

A series of soil samples, collected by DP, were analysed as part of the investigation of the site for organic and inorganic contaminants. The results are summarised on Table 13, Section 11.5.

The results of the soil analyses indicate that the organic and inorganic contaminant concentrations in all but one analysed soil sample were within the adopted SAC. The sample BH05/0.4-0.5 was found to have a lead concentration of 630 mg/kg, above the HIL C of 600 mg/kg. The concentration of lead was below the criteria for residential with minimal access to soils (HIL D). The source of the lead may be the filling or lead based paints used on former structures.

Two samples returned positive results for asbestos. MW01/0.5-0.6 was found to have chrysotile and amosite asbestos with trace respirable fibres detected. BH07/0.8-1.0 was also found to have chrystotile and amosite asbestos, but with no respirable fibres. The asbestos may be sourced from:

- A possible asbestos pipe passing in close proximity to the two bores;
- Asbestos in the filling; and/or
- Residual asbestos resulting from the demolition of former structures.

12.2 Groundwater Investigation

Three groundwater monitoring wells were installed across the site to enable the sampling and analysis of groundwater. The results are summarised on Table 14, Section 11.5.

The results of the groundwater analysis indicate that organic and inorganic contaminant concentrations were within the adopted GIL, with the exception of copper in MW01 (4 μ g/L), MW02 (3 μ g/L) and MW03 (2 μ g/L), exceeding the GIL 1.3 μ g/L. The elevated copper level is considered to be indicative of background levels and is therefore not considered to be significant.

12.3 Acid Sulphate Soil Investigation

The laboratory results for the ASS assessment are summarised in the following Table 16. The NATA accredited full laboratory certificates are provided in Appendix I.

| | S-POCAS Results | | | | | | | | | | | | | | |
|--------------|-----------------|-------------------|---------------|------|------------------------|-----------|------------------|-------------------------|-------------------------|-------------------------|--|--|--|--|--|
| Sample | | pH^ | | Ac | id Trail (H⁺/tonne | mol e) | Sulp | Retained Acidity (%) | | | | | | | |
| | рН _f | pH _{fox} | Change | ΤΑΑ | ТРА | TSA | S _{KCL} | Sp | S _{POS} | S _{nas} | | | | | |
| MW01/4.0-4.1 | 8.82 | 5.72 | 3.1 | <5 | <5 | <5 | 0.007 | 0.04 | 0.04 | - | | | | | |
| MW02/3.0-3.1 | 8.48 | 8.37 | 0.11 | <5 | <5 | <5 | <0.005 | 0.007 | 0.006 | - | | | | | |
| Guidelines | <4* | <3.5** | S-1* * | 18# | 18# | 18# | _ | _ | 0.03# | - | | | | | |
| Caldonneo | - 7 | -0.0 | - ' | 36## | 36## | 36## | | | 0.06## | | | | | | |

Table 16: Results of ASS Laboratory Analysis

Notes:

TAA Total Actual Acidity

TPA Total Potential Acidity

TSA Total Sulphidic Acidity (TPA-TAA)

S_{KCI} KCI extractable sulphur

S_P peroxide oxidation sulphur

S_{POS} Peroxide oxidisable sulphur

 $S_{nas} \quad \text{Net acid soluble sulphur} \\$

+ provides brief description only, full material description given in Test Bore Reports, Appendix B

* for Actual Acid Sulphate Soil

** Indicative value only, for Potential Acid Sulphate Soil

ASSMAC Action Criteria for disturbance of 1 – 1000 tonnes of coarse textured material i.e. sands to loamy sands

ASSMAC Action Criteria for disturbance of 1 – 1000 tonnes of medium textured material i.e. sandy loams to light clay

^ pH_f non-oxidised pH

pH_{fox} oxidised pH

Change pH_{fox} – pH_f

Based on the analytical results of the acid sulphate soil tests, the following observations were made:

- Based on site observations, screening test results and taking into account the various fill/soil horizons encountered, samples MW01/4.0-4.1 and MW02/3.0-3.1 were selected and submitted for SPOCAS testing;
- S_{POS} levels (sulphur trail) were only slightly above the action criteria of 0.03% for MW01/4.0-4.1;
- The acid trail in both samples were below the TPA and TSA action criteria of 18 mol H+/tonne, indicating the unlikely presence of ASS and acidic components in soil.

It is considered that the likelihood of the presence of ASS and acidic components in soil across the site is low.



12.4 Salinity and Aggressivity

The test results applicable to the assessment of soil salinity and aggressivity are presented on Table 15, Section 11.5.

The test results indicate the following soil characteristics:

- The site soils (fill and natural) most likely to be disturbed through future development (i.e. upper 2 m) were found to be generally non saline, with only a small number of samples indicating slight to moderate salinity;
- The soils within the same depth range were found to be non sodic; and
- The soils within the same depth range were found to be non aggressive to both steel and concrete.

One low soil pH was found at BH8/2.0-2.1 m, suggesting mild aggressivity towards concrete.

Based on the site observations and analytical results, it is considered that there are not likely to be any significant issues with the proposed development as a result of soil salinity or aggressivity. However, it is important to utilised good soil management and construction practices to minimise the potential for mobilising saline soils (where they may exist) and mitigating any impacts potentially undetected saline or aggressive soils may have on the proposed development. Such measure may include:

- Avoiding work that results in water collecting in low lying areas, depressions, or behind fill embankments or near trenches. This can lead to water logging of the soils, evaporative concentration of salts, and eventual breakdown in soil structure resulting in accelerated erosion;
- Retain or use native vegetation in landscaping areas, as such species are likely to be more adapted to the local environment;
- Any pavements should be designed to be well drained of surface water. There should not be
 excessive concentrations of runoff or ponding that would lead to water-logging of the pavement or
 additional recharge to the groundwater through any more permeable zones in the underlying
 filling material;
- Surface drains should generally be provided along the top of batter slopes to reduce the potential for concentrated flows of water down slopes possibly causing scour;
- Ensure that the damp proof membrane, where used, is constructed in accordance with the Building Code of Australia and does not permit any bridging between bricks below and above the membrane;
- Use a minimum 50 mm bedding sand layer beneath any ground bearing concrete floor slabs; and
- Ensure that all concrete structures are designed appropriately in accordance with Australian Standard AS2159 (2009) for mildly aggressive conditions.



13. Conclusion and Recommendations

This Phase 1 and 2 contamination investigation indicates that there is generally a low risk of soil or groundwater contamination within the site. As such, the site is considered, from a contamination perspective, to be generally suitable for the proposed development. The investigation also indicates that there are not likely to be any significant impacts to the development as a result of acid sulphate soils, soil salinity or aggressivity.

The following recommendations are provided in terms of further site investigations and management:

- It appears that there may be some asbestos on the site due to a former asbestos cement pipe/conduit located in the north western corner of the site, or asbestos in the filling (MW01 and BH107). In the event that this section is to be excavated during construction works, any asbestos cement materials should be removed by a suitably qualified and AS A licenced contractor. Given the detection of trace respirable fibres, air monitoring will be required as part of the works;
- Should any asbestos fragments be detected during future civil works, this area should be demarcated and the AS A licensed contractor engaged to removed the identified impact;
- Any soils requiring removal from the site must initially be classified in accordance with the NSW waste classification guidelines;
- Due to the limited access beneath the building at 333 Church Street, DP recommends that once the concrete slabs associated with the building have been removed, additional sampling in this area is conducted to ensure a complete sampling density in line with OEH NSW requirements.

14. Limitations

Douglas Partners (DP) has prepared this report for a Phase 1 and 2 contamination assessment at 12 – 14 Phillip Street and 333 Church Street, Parramatta, NSW in accordance with DP's proposal dated 6 September 2011 and acceptance received from Ms Lucinda Mander-Jones of Parramatta City Council on 16 September 2011. The report is provided for the exclusive use of Parramatta City Council for this project only and for the purpose(s) described in the report. It should not be used for other projects or by a third party. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

The results provided in the report are indicative of the sub-surface conditions only at the specific sampling or testing locations, and then only to the depths investigated and at the time the work was carried out. Sub-surface conditions can change abruptly due to variable geological processes and also as a result of anthropogenic influences. Such changes may occur after DP's field testing has been completed.

DP's advice is based upon the conditions encountered during this investigation. The accuracy of the advice provided by DP in this report may be limited by undetected variations in ground conditions between sampling locations. The advice may also be limited by budget constraints imposed by others or by site accessibility.

This report must be read in conjunction with all of the attached notes and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations



or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion given in this report.

Douglas Partners Pty Ltd

Appendix A

Site Layout Plan

and Notes About this Report



| Noualas Partners | CLIENT: | Parramatta Coun | cil | | TITLE: | Phase 1 & 2 Contamination Assessment | PROJECT No: | 72628.00 |
|------------------|---------|--|-------|--------------------|-------------|--|-------------|----------|
| | OFFICE: | OFFICE: Sydney DRAWN BY: PG Bore Location Plan | | Bore Location Plan | DRAWING No: | 1 | | |
| | SCALE: | NTS | DATE: | Oct 2011 | | 12-14 Phillip Street & 333 Church Street, Parramatta | REVISION: | 0 |

LEGEND

soil bore

 \bigcirc

groundwater monitoring well

unable to be sampled



Introduction

These notes have been provided to amplify DP's report in regard to classification methods, field procedures and the comments section. Not all are necessarily relevant to all reports.

DP's reports are based on information gained from limited subsurface excavations and sampling, supplemented by knowledge of local geology and experience. For this reason, they must be regarded as interpretive rather than factual documents, limited to some extent by the scope of information on which they rely.

Copyright

This report is the property of Douglas Partners Pty Ltd. The report may only be used for the purpose for which it was commissioned and in accordance with the Conditions of Engagement for the commission supplied at the time of proposal. Unauthorised use of this report in any form whatsoever is prohibited.

Borehole and Test Pit Logs

The borehole and test pit logs presented in this report are an engineering and/or geological interpretation of the subsurface conditions, and their reliability will depend to some extent on frequency of sampling and the method of drilling or excavation. Ideally, continuous undisturbed sampling or core drilling will provide the most reliable assessment, but this is not always practicable or possible to justify on economic grounds. In any case the boreholes and test pits represent only a very small sample of the total subsurface profile.

Interpretation of the information and its application to design and construction should therefore take into account the spacing of boreholes or pits, the frequency of sampling, and the possibility of other than 'straight line' variations between the test locations.

Groundwater

Where groundwater levels are measured in boreholes there are several potential problems, namely:

 In low permeability soils groundwater may enter the hole very slowly or perhaps not at all during the time the hole is left open;

- A localised, perched water table may lead to an erroneous indication of the true water table;
- Water table levels will vary from time to time with seasons or recent weather changes. They may not be the same at the time of construction as are indicated in the report; and
- The use of water or mud as a drilling fluid will mask any groundwater inflow. Water has to be blown out of the hole and drilling mud must first be washed out of the hole if water measurements are to be made.

More reliable measurements can be made by installing standpipes which are read at intervals over several days, or perhaps weeks for low permeability soils. Piezometers, sealed in a particular stratum, may be advisable in low permeability soils or where there may be interference from a perched water table.

Reports

The report has been prepared by qualified personnel, is based on the information obtained from field and laboratory testing, and has been undertaken to current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal, the information and interpretation may not be relevant if the design proposal is changed. If this happens, DP will be pleased to review the report and the sufficiency of the investigation work.

Every care is taken with the report as it relates to interpretation of subsurface conditions, discussion of geotechnical and environmental aspects, and recommendations or suggestions for design and construction. However, DP cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions. The potential for this will depend partly on borehole or pit spacing and sampling frequency;
- Changes in policy or interpretations of policy by statutory authorities; or
- The actions of contractors responding to commercial pressures.

If these occur, DP will be pleased to assist with investigations or advice to resolve the matter.

About this Report

Site Anomalies

In the event that conditions encountered on site during construction appear to vary from those which were expected from the information contained in the report, DP requests that it be immediately notified. Most problems are much more readily resolved when conditions are exposed rather than at some later stage, well after the event.

Information for Contractual Purposes

Where information obtained from this report is provided for tendering purposes, it is recommended that all information, including the written report and discussion, be made available. In circumstances where the discussion or comments section is not relevant to the contractual situation, it may be appropriate to prepare a specially edited document. DP would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Site Inspection

The company will always be pleased to provide engineering inspection services for geotechnical and environmental aspects of work to which this report is related. This could range from a site visit to confirm that conditions exposed are as expected, to full time engineering presence on site.

Appendix B

Groundwater Bore Search

1

Groundwater Works Summary

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Tuesday, September 20, 2011

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW108611

Works Details (top)

| GROUNDWATER NUMBER | GW108611 |
|---------------------------|-----------------------|
| LIC-NUM | 10WA108668 |
| AUTHORISED-PURPOSES | DOMESTIC |
| INTENDED-PURPOSES | DOMESTIC |
| WORK-TYPE | Bore |
| WORK-STATUS | Supply Obtained |
| CONSTRUCTION-METHOD | Down Hole Hammer |
| OWNER-TYPE | Private |
| COMMENCE-DATE | |
| COMPLETION-DATE | 2005-04-20 |
| FINAL-DEPTH (metres) | 60.50 |
| DRILLED-DEPTH (metres) | 60.50 |
| CONTRACTOR-NAME | |
| DRILLER-NAME | |
| PROPERTY | ROMAN CATHOLIC CHURCH |
| GWMA | - |
| GW-ZONE | - |
| STANDING-WATER-LEVEL | 6.20 |
| SALINITY | 5300.00 |
| YIELD | 5.50 |
| | |
| | |

Site Details (top)

| REGION | 10 - SYDNEY SOUTH COAST |
|------------------|-------------------------|
| RIVER-BASIN | 212 - HAWKESBURY RIVER |
| AREA-DISTRICT | |
| CMA-MAP | 9130-3N |
| GRID-ZONE | 56/1 |
| SCALE | 1:25,000 |
| ELEVATION | |
| ELEVATION-SOURCE | |
| NORTHING | 6257213.00 |
| EASTING | 315129.00 |
| LATITUDE | 33 48' 33" |
| LONGITUDE | 151 0' 10" |
| GS-MAP | |

e

AMG-ZONE56COORD-SOURCEGIS - Geographic Information SystemREMARK

Form-A (top)

| COUNTY | CUMBERLAND |
|----------------|---------------|
| PARISH | FIELD OF MARS |
| PORTION-LOT-DP | 1//1034092 |

Licensed (top)

COUNTYCUMBERLANDPARISHFIELD OF MARSPORTION-LOT-DP1 1034092

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

| HOLE- NO | PIPE- NO | COMPONENT- CODE | COMPONENT- TYPE | DEPTH- FROM (metres) | DEPTH- TO (metres) | OD (mm) | ID (mm) | INTERVAL | DETAIL |
|-------------|-------------|--------------------|--------------------|----------------------------|--------------------------|------------|------------|----------|---|
| 1 | | Hole | Hole | 0.00 | 11.50 | 206 | | | Down Hole Hammer |
| 1 | | Hole | Hole | 11.50 | 60.50 | 165 | | | Down Hole Hammer |
| 1 | 1 | Casing | Steel | -0.50 | 11.50 | 168 | 158.4 | | Welded; Driven into Hole; Open End |
| 1 | 1 | Casing | PVC Class 9 | -0.50 | 29.50 | 140 | | | Screwed and Glued; Suspended in Clamps |
| 1 | | Annulus | Concrete | -0.10 | 11.50 | 206 | | | |

Water Bearing Zones (top)

| FROM- DEPTH (metres) | TO-DEPTH (metres) | THICKNESS (metres) | ROCK- CAT- DESC | S- W-L | D- D- L | YIELD | TEST-HOLE- DEPTH (metres) | DURATION | SALINITY |
|----------------------------|----------------------|-----------------------|-----------------------|-----------|---------------|-------|---------------------------------|----------|----------|
| 46.10 | 46.30 | 0.20 | | | | 5.00 | | | 4650.00 |
| 56.50 | 56.60 | 0.10 | | 6.20 | | 0.20 | | | 5300.00 |

Drillers Log (top)

| FROM | то | THICKNESS | DESC | GEO-MATERIAL COMMENT |
|------|------|-----------|-------------|----------------------|
| 0.00 | 1.00 | 1.00 | Fill | |
| 1.00 | 3.00 | 2.00 | Clay, brown | |
| 3.00 | 5.50 | 2.50 | Shale | |

\$

| 5.50 | 7.00 | 1.50 | Sandstone, with Shale bedding |
|-------|-------|-------|-------------------------------|
| 7.00 | 22.00 | 15.00 | Sandstone, grey |
| 22.00 | 23.30 | 1.30 | Sandstone, soft |
| 23.30 | 46.10 | 22.80 | Sandstone, grey |
| 46.10 | 46.30 | 0.20 | Sandstone, fractured |
| 46.30 | 47.50 | 1.20 | Sandstone, grey |
| 47.50 | 47.70 | 0.20 | Sandstone, fractured |
| 47.70 | 56.50 | 8.80 | Sandstone, grey |
| 56.50 | 56.60 | 0.10 | Sandstone, fractured |
| 56.60 | 60.50 | 3.90 | Sandstone, grey |
| | | | |

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

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Groundwater Works Summary

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Tuesday, September 20, 2011

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW110914

Works Details (top)

| GROUNDWATER NUM | IBER GW110914 |
|---------------------|--------------------------------|
| LIC-NUM | 10BL603583 |
| AUTHORISED-PURPO | SES MONITORING BORE |
| INTENDED-PURPOSE | S MONITORING BORE |
| WORK-TYPE | Well |
| WORK-STATUS | |
| CONSTRUCTION-MET | HOD Auger - Solid Flight |
| OWNER-TYPE | Private |
| COMMENCE-DATE | |
| COMPLETION-DATE | 2010-01-20 |
| FINAL-DEPTH (metres |) 6.00 |
| DRILLED-DEPTH (met | res) 6.00 |
| CONTRACTOR-NAME | |
| DRILLER-NAME | |
| PROPERTY | AVIS RENT A CAR SYSTEM PTY LTD |
| GWMA | - |
| GW-ZONE | - |
| STANDING-WATER-LE | VEL 5.00 |
| SALINITY | |
| YIELD | |
| Site Details (top) | |
| REGION | 10 - SYDNEY SOUTH COAST |
| RIVER-BASIN | |
| AREA-DISTRICT | |
| CMA-MAP | |
| GRID-ZONE | |
| SCALE | |
| ELEVATION | |
| ELEVATION-SOURCE | |
| NORTHING | 6257260.00 |
| EASTING | 315973.00 |
| LATITUDE | 33 48' 32" |
| LONGITUDE | 151 0' 43" |
| GS-MAP | |
| | |

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AMG-ZONE 56 COORD-SOURCE REMARK

Form-A (top)

| COUNTY | CUMBERLAND |
|----------------|---------------|
| PARISH | FIELD OF MARS |
| PORTION-LOT-DP | 1//509643 |

Licensed (top)

COUNTYCUMBERLANDPARISHFIELD OF MARSPORTION-LOT-DP1 509643

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

| HOLE- NO | PIPE- NO | COMPONENT- CODE | COMPONENT- TYPE | DEPTH- FROM (metres) | DEPTH- TO (metres) | OD (mm) | ID (mm) | INTERVAL | DETAIL |
|-------------|-------------|--------------------|--------------------|----------------------------|--------------------------|------------|------------|----------|---|
| 1 | | Hole | Hole | 0.00 | 6.00 | 125 | | | Auger - Solid Flight |
| 1 | 1 | Opening | Screen | 2.50 | 6.00 | 50 | | | PVC Class 18; A: 1mm; Screwed |
| 1 | | Annulus | Waterworn/Rounded | 0.00 | 0.00 | | | | Graded; GS: 2- 3mm |

Water Bearing Zones (top)

| FROM- DEPTH (metres) | TO-DEPTH (metres) | THICKNESS (metres) | ROCK- CAT- DESC | S- W-L | D- D- L | YIELD | TEST-HOLE- DEPTH (metres) | DURATION | SALINITY |
|----------------------------|----------------------|-----------------------|-----------------------|-----------|---------------|-------|---------------------------------|----------|----------|
| 5.00 | 6.00 | 1.00 | | 5.00 | | | | 0.25 | |

Drillers Log (top)

| FI | ROM | то | THICKNESS | DESC | GEO-MATERIAL | COMMENT |
|----|-----|------|-----------|----------------------------|---------------------|---------|
| 0. | 00 | 0.20 | 0.20 | FILL, SILTY SAND BROWN | | |
| 0. | 20 | 0.40 | 0.20 | FILL, SANDY CLAY RED GREY | | |
| 0. | 40 | 1.10 | 0.70 | FILL SANDY CLAY RED | | |
| 1. | 10 | 2.50 | 1.40 | CLAY SANDY RED | | |
| 2. | 50 | 3.20 | 0.70 | CLAY RED | | |
| 3. | 20 | 5.00 | 1.80 | SILTSTONE, SHALE FRAGMENTS | | |

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| 5.00 | 5.50 0.50 | CLAY SANDY BROWN |
|------|-----------|------------------------------|
| 5.50 | 6.00 0.50 | SANDSTONE BROWN LOW STRENGTH |

Warning To Clients: This raw data has been supplied to the Department of Infrastructure, Planning and Natural Resources (DIPNR) by drillers, licensees and other sources. The DIPNR does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

Groundwater Works Summary

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Tuesday, September 20, 2011

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW110913

Works Details (top)

| GROUNDWATER NUMB | ER GW110913 |
|-----------------------|--------------------------------|
| LIC-NUM | 10BL603583 |
| AUTHORISED-PURPOSE | ES MONITORING BORE |
| INTENDED-PURPOSES | MONITORING BORE |
| WORK-TYPE | Well |
| WORK-STATUS | |
| CONSTRUCTION-METHO | DD Auger - Solid Flight |
| OWNER-TYPE | Private |
| COMMENCE-DATE | |
| COMPLETION-DATE | 2010-01-20 |
| FINAL-DEPTH (metres) | 10.00 |
| DRILLED-DEPTH (metres | s) |
| CONTRACTOR-NAME | |
| DRILLER-NAME | |
| PROPERTY | AVIS RENT A CAR SYSTEM PTY LTD |
| GWMA | - |
| GW-ZONE | - |
| STANDING-WATER-LEV | EL 7.00 |
| SALINITY | |
| YIELD | |
| Site Details (top) | |
| REGION 10 |) - SYDNEY SOUTH COAST |
| RIVER-BASIN | |
| AREA-DISTRICT | |
| СМА-МАР | |
| GRID-ZONE | |
| SCALE | |
| ELEVATION | |
| ELEVATION-SOURCE | |
| NORTHING 62 | 257267.00 |
| EASTING 31 | 5992.00 |
| LATITUDE 33 | 3 48' 32" |
| LONGITUDE 15 | 51 0' 43" |
| GS-MAP | |
| | |

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AMG-ZONE 56 COORD-SOURCE REMARK

Form-A (top)

| COUNTY | CUMBERLAND |
|----------------|---------------|
| PARISH | FIELD OF MARS |
| PORTION-LOT-DP | 1//509643 |

Licensed (top)

COUNTYCUMBERLANDPARISHFIELD OF MARSPORTION-LOT-DP1 509643

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

| HOLE- NO | PIPE- NO | COMPONENT- CODE | COMPONENT- TYPE | DEPTH- FROM (metres) | DEPTH- TO (metres) | OD (mm) | ID (mm) | INTERVAL | DETAIL |
|-------------|-------------|--------------------|--------------------|----------------------------|--------------------------|------------|------------|----------|---|
| 1 | | Hole | Hole | 0.00 | 10.00 | 125 | | | Auger - Solid Flight |
| 1 | 1 | Opening | Screen | 6.00 | 10.00 | 50 | | | PVC Class 18; A: 1mm; Screwed |
| 1 | | Annulus | Waterworn/Rounded | 0.00 | 0.00 | | | | GS: 2- 3mm |

Water Bearing Zones (top)

| FROM- DEPTH (metres) | TO-DEPTH (metres) | THICKNESS (metres) | ROCK- CAT- DESC | S- W-L | D- D- L | YIELD | TEST-HOLE- DEPTH (metres) | DURATION | SALINITY |
|----------------------------|----------------------|-----------------------|-----------------------|-----------|---------------|-------|---------------------------------|----------|----------|
| 7.00 | 10.00 | 3.00 | | 7.00 | | | | | |

Drillers Log (top)

| FR | MO | то | THICKNESS | DESC | GEO-MATERIAL | COMMENT |
|-----|----|------|-----------|------------------------|--------------|---------|
| 0.0 | 0 | 0.10 | 0.10 | CONCRETE | | |
| 0.1 | 0 | 0.20 | 0.10 | CLAY SILTY RED BROWN | | |
| 0.2 | 20 | 1.20 | 1.00 | CLAY SANDY RED BROWN | | |
| 1.2 | 20 | 2.00 | 0.80 | CLAY SANDY RED | | |
| 2.0 | 0 | 3.50 | 1.50 | CLAY SANDY BROWN | | |
| 3.5 | 50 | 4.50 | 1.00 | CLAY SANDY BROWN/SHALE | | |

| 4.50 | 4.90 | 0.40 | SANDSTONE BROWN LOW STRENGTH |
|------|-------|------|----------------------------------|
| 4.90 | 6.00 | 1.10 | CLAY SANDY BROWN SHALE FRAGMENTS |
| 6.00 | 6.20 | 0.20 | SANDSTONE WEATHERED GREY WHITE |
| 6.20 | 10.00 | 3.80 | SANDSTONE WHITE |
| | | | |

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Groundwater Works Summary

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Tuesday, September 20, 2011

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW110912

Works Details (top)

| GROUNDWATER NUMBER | GW110912 |
|------------------------|--------------------------------|
| LIC-NUM | 10BL603583 |
| AUTHORISED-PURPOSES | MONITORING BORE |
| INTENDED-PURPOSES | MONITORING BORE |
| WORK-TYPE | Well |
| WORK-STATUS | |
| CONSTRUCTION-METHOD | Auger - Solid Flight |
| OWNER-TYPE | Private |
| COMMENCE-DATE | |
| COMPLETION-DATE | 2010-01-20 |
| FINAL-DEPTH (metres) | 10.00 |
| DRILLED-DEPTH (metres) | 10.00 |
| CONTRACTOR-NAME | |
| DRILLER-NAME | |
| PROPERTY | AVIS RENT A CAR SYSTEM PTY LTD |
| GWMA | - |
| GW-ZONE | - |
| STANDING-WATER-LEVEL | 7.00 |
| SALINITY | |
| YIELD | |
| Site Details (top) | |
| | |
| REGION 10-3 | SYDNEY SOUTH COAST |
| RIVER-BASIN | |
| AREA-DISTRICT | |
| | |
| GRID-ZUNE | |
| SCALE | |
| | |
| ELEVATION-SOURCE | |
| NORTHING 6257 | 285.00 |
| EASTING 3159 | 97.00 |
| LATITUDE 33.48 | 3' 31" |
| LONGITUDE 151 (|)' 44" |
| GS-MAP | |

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AMG-ZONE 56 COORD-SOURCE REMARK

Form-A (top)

| COUNTY | CUMBERLAND |
|----------------|---------------|
| PARISH | FIELD OF MARS |
| PORTION-LOT-DP | 1//509643 |

Licensed (top)

| COUNTY | CUMBERLAND |
|----------------|---------------|
| PARISH | FIELD OF MARS |
| PORTION-LOT-DP | 1 509643 |

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

| HOLE- NO | PIPE- NO | COMPONENT- CODE | COMPONENT- TYPE | DEPTH- FROM (metres) | DEPTH- TO (metres) | OD (mm) | ID (mm) | INTERVAL | DETAIL |
|-------------|-------------|--------------------|--------------------|----------------------------|--------------------------|------------|------------|----------|---|
| 1 | | Hole | Hole | 0.00 | 10.00 | 125 | | | Auger - Solid Flight |
| 1 | 1 | Opening | Screen | 3.00 | 10.00 | 50 | | | PVC Class 18; A: 1mm; Screwed |
| 1 | | Annulus | Waterworn/Rounded | 0.00 | 0.00 | | | | Graded; GS: 2- 3mm |

Water Bearing Zones (top)

| FROM- DEPTH (metres) | TO-DEPTH (metres) | THICKNESS (metres) | ROCK- CAT- DESC | S- W-L | D- D- L | YIELD | TEST-HOLE- DEPTH (metres) | DURATION | SALINITY |
|----------------------------|----------------------|-----------------------|-----------------------|-----------|---------------|-------|---------------------------------|----------|----------|
| 7.00 | 10.00 | 3.00 | | 7.00 | | | | 0.25 | |

Drillers Log (top)

| FROM | то | THICKNESS | DESC | GEO- MATERIAL | COMMENT |
|------|-------|-----------|-------------------------|------------------|---------|
| 0.00 | 0.10 | 0.10 | CONCRETE | | |
| 0.10 | 0.50 | 0.40 | FILL,SILTY CLAY, GRAVEL | | |
| 0.50 | (1.80 | 1.30 | CLAY SANDY GREY RED | | |
| 1.80 | 2.50 | 0.70 | CLAY SANDY GREY BROWN | | |
| 2.50 | 3.00 | 0.50 | CLAY SANDY GREY | | |

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| 3.00 | 3.50 | 0.50 | CLAY SANDY SOME SHALE FRAGMENTS |
|------|-------|------|---|
| 3.50 | 4.30 | 0.80 | SHALE CLAY BROWN |
| 4.30 | 5.00 | 0.70 | SHALE LOW STRENGTH,IRONSTONE,SANDSTONE |
| 5.00 | 5.20 | 0.20 | SHALE LOW STRENGTH DARK GREY |
| 5.20 | 6.50 | 1.30 | SHALE LOW STRENGTH BROWN SANDSTONE BANDS |
| 6.50 | 6.80 | 0.30 | SANDSTONE LOW STRENGTH WHITE |
| 6.80 | 10.00 | 3.20 | SANDSTONE MEDIUM STRENGTH WHITE |
| | | | |

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Groundwater Works Summary

For information on the meaning of fields please see <u>Glossary</u> Document Generated on Tuesday, September 20, 2011

Print Report

Works Details Site Details Form A Licensed Construction Water Bearing Zones Drillers Log

Work Requested -- GW024667

Works Details (top)

| GROUNDWATER NUMBER | GW024667 |
|------------------------|--------------------|
| LIC-NUM | 10WA108142 |
| AUTHORISED-PURPOSES | DOMESTIC |
| INTENDED-PURPOSES | GENERAL USE |
| WORK-TYPE | Well |
| WORK-STATUS | Supply Obtained |
| CONSTRUCTION-METHOD | Hand Dug |
| OWNER-TYPE | Private |
| COMMENCE-DATE | |
| COMPLETION-DATE | 1966-10-01 |
| FINAL-DEPTH (metres) | 4.50 |
| DRILLED-DEPTH (metres) | 4.60 |
| CONTRACTOR-NAME | |
| DRILLER-NAME | |
| PROPERTY | N/A |
| GWMA | 603 - SYDNEY BASIN |
| GW-ZONE | - |
| STANDING-WATER-LEVEL | |
| SALINITY | |
| YIELD | |

Site Details (top)

| REGION | 10 - SYDNEY SOUTH COAST |
|------------------|------------------------------------|
| RIVER-BASIN | 213 - SYDNEY COAST - GEORGES RIVER |
| AREA-DISTRICT | |
| CMA-MAP | 9130-3N |
| GRID-ZONE | 56/1 |
| SCALE | 1:25,000 |
| ELEVATION | |
| ELEVATION-SOURCE | (Unknown) |
| NORTHING | 6256207.00 |
| EASTING | 316368.00 |
| LATITUDE | 33 49' 6" |
| LONGITUDE | 151 0' 57" |
| GS-MAP | 0055A4 |

AMG-ZONE 56 COORD-SOURCE GD.,PR. MAP REMARK

Form-A (top)

COUNTYCUMBERLANDPARISHST JOHNPORTION-LOT-DP99999

Licensed (top)

COUNTYCUMBERLANDPARISHST JOHNPORTION-LOT-DPN/A

Construction (top)

Negative depths indicate Above Ground Level;H-Hole;P-Pipe;OD-Outside Diameter; ID-Inside Diameter;C-Cemented;SL-Slot Length;A-Aperture;GS-Grain Size;Q-Quantity

| HOLE- NO | PIPE- NO | COMPONENT- CODE | COMPONENT- TYPE | DEPTH- FROM (metres) | DEPTH- TO (metres) | OD (mm) | ID (mm) | INTERVAL | DETAIL |
|-------------|-------------|--------------------|---------------------|----------------------------|--------------------------|------------|------------|----------|-----------|
| 1 | 1 | Casing | Concrete Cylnder | -0.60 | -0.60 | 914 | | | (Unknown) |

Water Bearing Zones (top)

| FROM- DEPTH (metres) | TO- DEPTH (metres) | THICKNESS (metres) | ROCK-CAT- DESC | S- W-L | D- D- ר L | YIELD | TEST- HOLE- DEPTH (metres) | DURATION | SALINITY |
|----------------------------|--------------------------|-----------------------|-------------------|-----------|-----------------|-------|-------------------------------------|----------|----------|
| 2.40 | 2.40 | 0.00 | Unconsolidated | 2.40 | | | | | Fresh |

Drillers Log (top)

FROM TO THICKNESS DESC GEO-MATERIAL COMMENT

0.00 4.57 4.57 Sand Water Supply

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5° 2. "

12-14 Phillip St & 333 Church St, Parramatta

Map created with NSW Natural Resource Atlas - http://www.nratlas.nsw.gov.au



| Symbol | Layer | Cu |
|------------|---|----|
| 0 | Cities and large towns renderImage: Cannot build image from features | |
| Cowra O | Populated places renderImage: Cannot build image from features | |
| 0 | Towns | |
| • | Groundwater Bores | |
| | Catchment Management Authority boundaries | |
| AZ | Major rivers | |

Topographic base map

Appendix C

Aerial Photographs



| | CLIENT: Parramatta City Council | | | TITLE: | 1943 Aerial Photograph | |
|--|---------------------------------|--|------------------|--------|----------------------------------|--|
| Douglas Partners Geotechnics · Environment · Groundwater | DRAWN BY: KS SCALE: As shown | | OFFICE: Sydney | | Phase 1 & 2 Contamination Ass | |
| | APPROVED BY | | DATE: 26.09.2011 | | 12-14 Phillip and 333 Church Str | |



North


| | CLIENT: Parramatta City Cour | ncil | | TITLE: | 1961 Aerial Photograph | Project No: | 72628.00 |
|--|------------------------------|-----------------|------------------|--------|--|-------------|----------|
| Douglas Partners Geotechnics · Environment · Groundwater | DRAWN BY: KS | SCALE: As shown | OFFICE: Sydney | | Phase 1 & 2 Contamination Assessment | Photo No: | 2 |
| | APPROVED BY | | DATE: 28.09.2011 | | 12-14 Phillip & 333 Church Streets, Parramatta | Revision: | |



| | CLIENT: Parramatta City Coun | cil | | TITLE: | 1970 Aerial Photograph |
|--|------------------------------|-----------------|------------------|--------|----------------------------------|
| Douglas Partners Geotechnics • Environment • Groundwater | DRAWN BY: KS | SCALE: As shown | OFFICE: Sydney | | Phase 1 & 2 Contamination Ass |
| | APPROVED BY | | DATE: 28.09.2011 | | 12-14 Phillip & 333 Church Stree |

Project No:72628.00SessmentPhoto No:3ets, ParramattaRevision:



| | CLIENT: Parramatta City Cour | ncil | | TITLE: | 1982 Aerial Photograph |
|--|------------------------------|-----------------|------------------|--------|----------------------------------|
| Douglas Partners Geotechnics · Environment · Groundwater | DRAWN BY: KS | SCALE: As shown | OFFICE: Sydney | | Phase 1 & 2 Contamination Ass |
| | APPROVED BY | | DATE: 26.09.2011 | | 12-14 Phillip & 333 Church Stree |





| | CLIENT: Parramatta City Coun | cil | | TITLE: | 2002 Aerial Photograph |
|--|------------------------------|-----------------|------------------|--------|----------------------------------|
| Douglas Partners Geotechnics · Environment · Groundwater | DRAWN BY: KS | SCALE: As shown | OFFICE: Sydney | | Phase 1 & 2 Contamination Asso |
| | APPROVED BY | | DATE: 26.09.2011 | | 12-14 Phillip & 333 Church Stree |





| | CLIENT: Parramatta City Cou | ncil | | TITLE: | 2011 Aerial Photograph | Project No: | 72628.00 |
|--|-----------------------------|-----------------|------------------|--------|--|-------------|----------|
| Douglas Partners Geotechnics · Environment · Groundwater | DRAWN BY: KS | SCALE: As shown | OFFICE: Sydney | | Phase 1 & 2 Contamination Assessment | Photo No: | 6 |
| | APPROVED BY | | DATE: 26.09.2011 | | 12-14 Phillip & 333 Church Streets, Parramatta | Revision: | |

Appendix D

Historical Title Deeds

Service First Registration Pty Ltd

Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

Summary of Owners Report

<u>LPMA</u>

Sydney

Re: - 333 Church Street, Parramatta

Description: - Lot 3 D.P. 825045

| Data of A successful and a | Desister 1 Descriptor (2) 8 Occurrenting 1 | |
|---|--|--|
| Date of Acquisition and | wegistered Proprietor(s) & Occupations where | Reference to Title at Acquisition and sale |
| <u>terni nelu</u> | | - |
| (10.10.1925) | Anna Louisa Smith (Widow) | Book 1323 No. 440 |
| (1925 to 1925) | | |
| 11.12.1923 (1923 to 1936 - as regards that | | Now |
| part marked (A) on the | | (A) on the attached copy of D.P. 825045) |
| attached copy of D.P. 825045) | Claude Breasley (Real Estate Agent) | And |
| part marked (B) on the | | Vol 4784 Fol 48 (as regards that part marked |
| attached copy of D.P. 825045) | | (B) on the attached copy of D.P. 825045) |
| 06.03.1936 | | Vol 4514 Fol 105 |
| (1950 to 1960 as regards that | Frank Edward Maling (Merchant) | Now |
| attached copy of D.P. 825045) | | Vol 4784 Fol 38 |
| 30.03.1937 | | |
| (1937 to 1938 - as regards that | Sidney Joseph Adams (Gentleman) | Vol 4784 Fol 48 |
| part marked (B) on the | | |
| attached copy of D.P. 825045) | | |
| (1938 to 1960 - as regards that) | | |
| part marked (B) on the | Frank Edward Maling (Merchant) | Vol 4784 Fol 48 |
| attached copy of D.P. 825045) | | |
| 28.10.1960 | | Vol 4784 Fol's 38 & 48 |
| (1960 to 1988 – As regards the | Parramatta Arcade Pty Limited | Now |
| whole of the subject land) | | Vol 10417 Fol's 86 & 87 |
| 29.09.1988 | | Vol 10417 Fol's 86 & 87 |
| (1988 to 1992) | Interior No. 2 Pty Limited | Now B/222262 & C/222262 |
| | # Leo Papadolias | |
| 15.05.1992 | # Anna Papadolias | B/333263 & C/333263 |
| (1992 to date) | # Stavros Skarmoutzos | Now |
| | # Avgi Skarmoutzos | 3/825045 |

Denotes current Registered Proprietors

Yours Sincerely Mark Groll 30 September 2011 (Ph: 0412 199 304)

A



Reg Ċ.A Rel PARRAMATTA RIVER Los PLA 10 È. 20. 200 of orest 5 CUTTER 0.25 WIDE 42 20 A D.R. 3332563 CUTTER 0.27 UIDE 257 =1 55 Longi Tot got CUTTER 0.34 UIDE WAS CLEAR Mun. Ci (A) (a) 22.163 30 Loci (A) EASEMENT - C415677 TWO STOREY BRICK COMMERCIAL BUILDING NO.377 ŝ, Poris (B) BENEFITED BY EASEMENT STREE1 - C418127 Cau Ŋ,) 593.7 This Jun and and 203 · 07 'so" 271" 29" 20.345 WALL DITS CLEAR U RH.DHAW FD. 286"53"-7.785 BY ME (DP.791693) ar.M 15.535 a surv arrand pinn.... is accu. Provetic the De the 2 CLES D. D. Pien D.1 RM.NAIL & FD. 269'00'-3.62 (DP.791693) PANE dedic reser positi сни_{всн} ė S Strain S PHILLIP STREET WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION This negative is a photograph made as a permanent

record of a document in the custody of the

Registrar General this day. 10th September 1992

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Plan Drawing only to appear in this space

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PLAN FORM 2

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Req:R777146 /Doc:CT 10417-086 CT /Rev:23-Dec-2010 /Sts:OK.OK /Prt:19-Sep-2011 10:08 /Pgs:ALL /Seq:1 of 4 Ref:df /Src:T 10417096 RTIFICATE OF TITLE NEW SOUTH WALES OPERTY ACT, 1900, as amended. 86 10417Application No. 25815 LC. Vol Prior Title Vol. 4784 Fol. 38 Edition issued 14-10-1966 á K424911 ĉ 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. 040 Witness S. Vandine Registrar General. PLAN SHOWING LOCATION OF LAND SEE AUTO FOLIO (IOR. (Page) 7%p B L, PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON OCUMENT MUST NOT BE REMOVED FROM С DIAGRAM. -NOT TO SCALE. B (5% in) 60 C Scale: 30 feet to one inch. K 424911. DE Ú ESTATE AND LAND REFERRED TO Estate in Fee Simple in Lot B in plan lodged with Transfer No. C418127 (now filed as P.P. 333263) in City of Parramatta, Parish of St. John and County of Cumberland being part of Allotment 1A Section 24 granted to John Byrnes on 20-5-1840. atas Registrar General. FIRST SCHEDULE (Continued overleaf) レージョン THE -PARRAMATTA ARGADE PTY HIELES OFFICE Registrar General. SECOND SCHEDULE (Continued overleaf) Reservations and conditions, if any, contained in the Crown Grant above referred to. Easement created by Transfer No. C415677 affecting the part of the land above described designated (X) in the plan hereon. System of Party affecting the part of the land above described designated (X) EĄ Easement created by Transfer No. C418127/appurtement to the land above described affecting the piece of land 2 fagt 6 inches wide within Lot A shown in the plan hereon. We described allocting the place -Lease No. J86608 of the shop situated on part of the ground floor and basement of premises known as Nos. 333-337 (inclusive) Church Street, Willramatta together with rights to Sydney Wide Trading & FA = Expired 10 - 4 - 1968 Finance Pty. Limited with consent of Mortgagee. Entered 27-1-1965. Registrar General. NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

| | | FIRST SCHEDULE (continued) | | | | | A X X X X X X X X X X X X X X X X X X X | 200.001 |
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| Interior No | . 2 Pty. Limited by Tran | sfer X840053. Registered 29-9-1988 | | | | , | Ø | K41880 A-2 |
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| | SECOND SCHEDULE (continued) | | | - | |
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| r Terrete | by -Partinge-BrosPtyLimitedRegistered-25-9-1981. | | Тарвед | T293522 | Sec. |
| . Parremetta in plan ann | exed hereto/together with the rights of access and services and | | | | |
| referred to in Clauge | 2 of Schedule 1 with option of renewal expires on 31-6-1983. | | The second se | | |
| 19-1-1983 (127) | | Construction of the second sec | Expired | 28-5-1985 | |
| Lease to Shoppers Nor- | 1d Pty Limited of premises being Shop part of the ground floor and besement | | | | |
| of the building known. | as 333–337 Church Street, Perremette es shown in plan annexed to lease | | | | |
| 1406198. together with | n rights.Expires 23-6-1986, Registered 21-10-1983 | | Cancelled | X513251 | |
| ollease to Apostinh Bros | . Ety. Limited of premises being the part of premises known as | | | | |
| 333 to 337 Church Stre | et. Parmatta being the area demised by 1,410984 and M363863. | (| | - | |
| Expires 31.8.1994. Ret | pistereli 28-5-1985. | | | | |
| Lease W298332 Sub Lease | to Vition Sound Sales and Service Pty. Limited. Expires 10.2.1987 with Opti | - - | | | |
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| t tease to Survil Ptv. | limited of pycerices being Spars, and has another bolou in building to a 222 | | | | |
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| PARTICULARS | of room 13, and 4 which that I hulding the source to 32 Clind that Paramata (Butto All will to Build will of Clatacal Butto All and to Bar No 2 an aboun an | contraine de decomment segretes, to Neila - contensing contrained book and book and the at private head and manana the first menoral of the | with right to targe testic builder of lagueophy with any Weller and Judy Pauller, W. W. K. C | unwour overet, rarvaueves, roserner with righter for Norrise Catering Co. Phy. Limited | <u>heasmont of the building lanear an 333 to 337 Ghuroh Street.</u> <u>Farramatha as shown in Eistramered to lease No. 1406198</u> to Marren Loolis Poulton of Glanharen, Company Director | and June Poulton his wife. -of-shop-preates-forming.part-of-the-building-known-as | - <u>???-to-??f (inclusive)</u> Church-Stzeet, Parramatta, being the bacement shop forming part of the ground floor and portion of the basement wid also Shop No. 2 together with. | the basement thereto all shown in plans annexed to Lease No. 1410984 (together with mights) to Agostino Bros. Pty. | Limited af the shop premises beingigari-of the ground floot-and boomout of the building home is 222 to 227 and the | Farrangleta as shown in plan amered to Lease No. 1406398 | | |
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| Signature of | Registrar General | | · · · | | | é en | A | | | | | | | 7 | | | | | 6 | | - | 69 | | | | | | | | | | |
| i entegen | CIVIENCE | | 1 | | | 3-2-2-16.67 | | | | | | | Hubasement | 10000 | | | | <u>-vith Option</u> | | ын аs 333 | t 5 years. | | 201-2-4-2-128 | | | | | - | | | | No. No. No. |
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Historical Title

LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

FOLIO: B/333263

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 10417 FOL 86

| Recorded | Number | Type of Instrument | C.T. Issue |
|-------------------------------------|-------------------------------|---|-----------------------------------|
| 29/7/1989 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 19/10/1989 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 27/2/1992 | E286383 | REQUEST | EDITION 1 |
| 15/5/1992 15/5/1992 15/5/1992 | E434282 E434283 E434284 | DISCHARGE OF MORTGAGE TRANSFER MORTGAGE | EDITION 2 |
| 1/6/1992 | E499069 | DEPARTMENTAL DEALING | EDITION 3 |
| 9/9/1992 | DP825045 | DEPOSITED PLAN | FOLIO CANCELLED |
| 13/9/1999 | 6187444 | DEPARTMENTAL DEALING | |
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*** END OF SEARCH ***

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PRINTED ON 21/9/2011

Leap Searching an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronic by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.



Historical Title

LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE ------21/9/2011 8:41AM

FOLIO: C/333263

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First Title(s): SEE PRIOR TITLE(S)
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| Recorded | Number | Type of Instrument | C.T. Issue |
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| 29/7/1989 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 22/8/1989 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 5/3/1992 | E301931 | DEPARTMENTAL DEALING | EDITION 1 |
| 15/5/1992 15/5/1992 15/5/1992 | E434282 E434283 E434284 | DISCHARGE OF MORTGAGE TRANSFER MORTGAGE | EDITION 2 |
| 1/6/1992 | E499069 | DEPARTMENTAL DEALING | EDITION 3 |
| 9/9/1992 | DP825045 | DEPOSITED PLAN | FOLIO CANCELLED |
| 13/9/1999 | 6187444 | DEPARTMENTAL DEALING | |
| | | | |

*** END OF SEARCH ***

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PRINTED ON 21/9/2011

Leap Searching an approved NSW Information Broker hereby certifies that the information contained in this document has been provided electronic by the Registrar General in accordance with Section 96B(2) of the Real Property Act 1900.



Historical Title

LEAP Searching An Approved LPI NSW Information Broker

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE ------19/9/2011 8:15AM

FOLIO: 3/825045

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First Title(s): OLD SYSTEM Prior Title(s): B-C/333263

| Recorded | Number | Type of Instrument | | C.T. Issue | |
|--------------------------|--------------------|---|----------|----------------------------|----|
| 9/9/1992 | DP825045 | DEPOSITED PLAN | | FOLIO CREATED EDITION 1 | |
| 29/9/1992 | E792435 | DEPARTMENTAL DEALING | G | EDITION 2 | |
| 22/9/1993 | 1665560 | LEASE | | | |
| 22/9/1993 | 1665561 | LEASE | | | |
| 22/9/1993 | 1665562 | LEASE | | EDITION 3 | |
| 20/9/1995 | 0549063 | LEASE | | | |
| 20/9/1995 | 0549064 | LEASE | | EDITION 4 | |
| 25/6/1996 | 2254193 | LEASE | | EDITION 5 | |
| 21/11/1996 | 2633874 | LEASE | | EDITION 6 | |
| 17/10/1997 | 3499773 | LEASE | | EDITION 7 | |
| 31/3/1998 | 3890368 | LEASE | | EDITION 8 | |
| 5/7/1999 | 5957002 | DEPARTMENTAL DEALING | G | | |
| 26/5/2000 | 6813460 | LEASE | | | |
| 26/5/2000 | 6813494 | LEASE | | EDITION 9 | |
| 27/4/2001 | 7565558 | LEASE | | EDITION 10 | |
| 6/12/2001 | 8180805 | CAVEAT | | | |
| 13/5/2002 | 8346809 | REJECTED - LEASE | | | |
| 19/8/2002 | 8877075 | LEASE | | EDITION 11 | |
| 18/10/2002 18/10/2002 | 9045285 9045286 | TRANSFER OF LEASE VARIATION OF LEASE | | | |
| 7/3/2003 | 9420373 | LEASE | | EDITION 12 | |
| 16/9/2005 | AB699043 | APPLICATION FOR PREI OF LAPSING NOTICE | PARATION | | |
| | | | END OF | PAGE 1 ~ CONTINUED OV | ER |
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PRINTED ON 19/9/2011

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Title Search

LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/825045

SEARCH DATE TIME EDITION NO DATE -----_ _ _ _ ------ - - -19/9/2011 8:14 AM 18 30/8/2010

LAND - - - -LOT 3 IN DEPOSITED PLAN 825045 AT PARRAMATTA LOCAL GOVERNMENT AREA PARRAMATTA PARISH OF ST JOHN COUNTY OF CUMBERLAND TITLE DIAGRAM DP825045 FIRST SCHEDULE LEO PAPADOLIAS ANNA PAPADOLIAS AS JOINT TENANTS IN 1/2 SHARE STAVROS SKARMOUTZOS AVGI SKARMOUTZOS AS JOINT TENANTS IN 1/2 SHARE AS TENANTS IN COMMON (DD E792435) SECOND SCHEDULE (8 NOTIFICATIONS) -----RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S) 1 EASEMENT AFFECTING THE PART OF THE LAND ABOVE 2 C415677 DESCRIBED SHOWN SO BURDENED IN THE TITLE DIAGRAM 3 EASEMENT APPURTENANT TO THE PART OF THE LAND ABOVE C418127 DESCRIBED SHOWN SO BENEFITED IN THE TITLE DIAGRAM MORTGAGE TO NATIONAL AUSTRALIA BANK LIMITED 4 E434284 5 AC212637 LEASE TO AUSBD PTY LIMITED OF REAR GROUND FLOOR, 333-337 CHURCH ST, PARRAMATTA. EXPIRES: 31/8/2010. OPTION OF RENEWAL: 5 YRS. 6 AD557279 LEASE TO MLC CONVEYANCING PTY LIMITED OF SUITE 2, LEVEL 1, 333-337 CHURCH ST, PARRAMATTA. EXPIRES: 9/8/2010. OPTION OF RENEWAL: 3 YEARS. 7 LEASE TO NILE RIVER TRADING PTY LIMITED OF SHOP 2, AE744714 333-337 CHURCH STREET, PARRAMATTA. EXPIRES: 4/2/2012. OPTION OF RENEWAL: 5 YEARS. AF723991 LEASE TO BATTLEBRIDGE PTY LIMITED OF PREMISES KNOWN 8 AS SHOP 1, 333-337 CHURCH STREET, PARRAMATTA. EXPIRES: 3/3/2015. NOTATIONS _____ UNREGISTERED DEALINGS: NIL *** END OF SEARCH ***

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PRINTED ON 19/9/2011

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

Service First Registration Pty Ltd

Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

Summary of Owners Report

<u>LPMA</u>

Sydney

Re: - Marsden, Phillip & Church Streets, Parramatta

Description: - Lot 1 D.P. 791693

As regards that part marked (1) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 28.12.1897 (1897 to 1932) | Elsie Ellen Fleay (Spinster) | Vol 696 Fol 184 |
| 10.10.1932 (1932 to 1933) | Alexander Melville (Agent) (Transmission Application not investigated) | Vol 696 Fol 184 |
| 11.07.1933 (1933 to 1941) | Donald Fleay Melville (Farmer & Grazier) Alexander Melville (Agent) | Vol 696 Fol 184 Now Vol 4589 Fol's 237 & 250 |
| 22.07.1941 (1941 to 1941) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) (Transmission Application not investigated) | Vol 4589 Fol's 237 & 250 |
| 11.06.1941 (1941 to 1959) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) | Vol 4589 Fol's 237 & 250 Now Vol 7324 Fol's 58 & 59 |
| 09.10.1959 (1959 to 1970) | Coulan George Burnham (Company Director) | Vol 7324 Fol's 58 & 59 Now Vol 7791 Fol 62 |
| 30.06.1970 (1970 to 1973) | Burnham Brothers Pty Limited | Vol 7791 Fol 62 |
| 20.09.1973 (1973 to 1979) | M.B.C. (Parramatta) Pty Limited (Now T.S.S.S. Parramatta Pty Ltd) | Vol 7791 Fol 62 Now Vol 13103 Fol 116 |
| 13.11.1979 (1979 to 1981) | John Patrick Partridge (Real Estate Agent) Christopher Errol Underwood (Jeweller) David Garth Tetley Miles (Real Estate Agent) Gail Miles (Married Woman) | Vol 13103 Fol 116 Now Vol 14331 Fol 36 |
| 27.01.1981 (1981 to date) | # Council of the City of Parramatta | Vol 14331 Fol 36 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (2) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|--------------------------------------|---|---|
| 28.12.1897 (1897 to 1932) | Elsie Ellen Fleay (Spinster) | Vol 696 Fol 184 |
| 10.10.1932 (1932 to 1933) | Alexander Melville (Agent) (Transmission Application not investigated) | Vol 696 Fol 184 |



Service First Registration Pty Ltd

Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

Search continued as regards that part marked (2) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 11.07.1933 (1933 to 1941) | Donald Fleay Melville (Farmer & Grazier) Alexander Melville (Agent) | Vol 696 Fol 184 Now Vol 4589 Fol's 237 & 250 |
| 22.07.1941 (1941 to 1941) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) (Transmission Application not investigated) | Vol 4589 Fol's 237 & 250 |
| 11.06.1941 (1941 to 1953) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) | Vol 4589 Fol's 237 & 250 Now Vol 5283 Fol's 25 & 27 |
| 07.12.1953 (1953 to 1966) | Stanley Kerkenzov (Radio Salesman) | Vol 5283 Fol's 25 & 27 Now Vol 6821 Fol 223 |
| 28.10.1966 (1966 to date) | # Council of the City of Parramatta | Vol 6821 Fol 223 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (3) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | <u>Reference to Title at Acquisition</u> and sale |
|-----------------------------------|--|---|
| 28.12.1897 (1897 to 1932) | Elsie Ellen Fleay (Spinster) | Vol 696 Fol 184 |
| 10.10.1932 (1932 to 1933) | Alexander Melville (Agent) (Transmission Application not investigated) | Vol 696 Fol 184 |
| 11.07.1933 (1933 to 1941) | Donald Fleay Melville (Farmer & Grazier) Alexander Melville (Agent) | Vol 696 Fol 184 Now Vol 4589 Fol's 237 & 250 |
| 22.07.1941 (1941 to 1941) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) (Transmission Application not investigated) | Vol 4589 Fol's 237 & 250 |
| 11.06.1941 (1941 to 1954) | Amy Jane Melville (Widow) Donald Fleay Melville (Farmer & Grazier) | Vol 4589 Fol's 237 & 250 Now Vol 5283 Fol's 25 & 27 |
| 29.01.1954 (1954 to 1965) | Mark Foy's Limited | Vol 5283 Fol's 25 & 27 Now Vol 6951 Fol 173 |
| 07.07.1965 (1965 to date) | # Council of the City of Parramatta | Vol 6951 Fol 173 Now 1/791693 |



Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards those parts marked (4) & (5) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 21.05.1902 (1902 to 1918) | James Channon (Manufacturer) | Vol 1405 Fol 215 |
| 06.12.1918 (1918 to 1923) | Eliza Mary Haydon (Spinster) Eileen Bridget Haydon (Spinster) (Now Eileen Bridget Burton, Married Woman) Mary Theresa Haydon (Spinster) | Vol 1405 Fol 215 Now Vol 2908 Fol's 188, 189 & 190 |
| 28.02.1923 (1923 to 1924) | Lee Sing (Merchant & Married Woman) | Vol 2908 Fol's 188, 189 & 190 Now Vol 3445 Fol 183 |
| 28.01.1924 (1924 to 1935) | Alfred Bassett (Grazier) | Vol 3445 Fol 183 |
| 18.02.1935 (1935 to 1953) | John McAuslan Ritchie (Gentleman) | Vol 3445 Fol 183 |
| 07.12.1953 (1953 to 1968) | Mark Foy's Limited | Vol 3445 Fol 183 |
| 21.02.1968 (1968 to date) | # Council of the City of Parramatta | Vol 3445 Fol 183 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (6) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 21.05.1902 (1902 to 1918) | James Channon (Manufacturer) | Vol 1405 Fol 215 |
| 06.12.1918 (1918 to 1923) | Eliza Mary Haydon (Spinster) Eileen Bridget Haydon (Spinster) (Now Eileen Bridget Burton, Married Woman) Mary Theresa Haydon (Spinster) | Vol 1405 Fol 215 Now Vol 2908 Fol's 188, 189 & 190 |
| 09.08.1923 (1923 to 1924) | Lee Sing (Merchant & Married Woman) | Vol 2908 Fol's 188, 189 & 190 Now Vol 3503 Fol 47 |
| 28.01.1924 (1924 to 1935) | Alfred Bassett (Grazier) | Vol 3503 Fol 47 |
| 18.02.1935 (1935 to 1953) | John McAuslan Ritchie (Gentleman) | Vol 3503 Fol 47 |
| 07.12.1953 (1953 to 1968) | Mark Foy's Limited | Vol 3503 Fol 47 |
| 21.02.1968 (1968 to date) | # Council of the City of Parramatta | Vol 3503 Fol 47 Now 1/791693 |



Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards that part marked (7) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 21.05.1902 (1902 to 1918) | James Channon (Manufacturer) | Vol 1405 Fol 215 |
| 06.12.1918 (1918 to 1922) | Eliza Mary Haydon (Spinster) Eileen Bridget Haydon (Spinster) (Now Eileen Bridget Burton, Married Woman) Mary Theresa Haydon (Spinster) | Vol 1405 Fol 215 Now Vol 2908 Fol's 188, 189 & 190 |
| 17.11.1922 (1922 to 1935) | Stephen Arthur Ellich (Furniture Dealer) George Andrew Paul (Furniture Dealer) | Vol 2908 Fol's 188, 189 & 190 Now Vol 3426 Fol's 32 & 33 |
| 02.05.1935 (1935 to 1953) | John McAuslan Ritchie (Gentleman) | Vol 3426 Fol's 32 & 33 Now Vol 4691 Fol 211 |
| 07.12.1953 (1953 to 1967) | Mark Foy's Limited | Vol 4691 Fol 211 |
| 25.10.1967 (1967 to date) | # Council of the City of Parramatta | Vol 4691 Fol 211 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (8) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 06.01.1876 (1876 to 1921) | David Houison (& His Deceased Estate) | Devise by the Will of James Houison |
| 17.03.1921 (1921 to 1925) | Sidney Smith (Produce Merchant) | Book 1216 No. 951 |
| 30.01.1925 (1925 to 1931) | Stephen Arthur Ellich (Furniture Dealer) George Andrew Paul (Furniture Dealer) | Book 1374 No. 42 |
| 20.07.1931 (1931 to 1951) | Sidney Smith (Produce Merchant) | Book 1629 No. 147 |
| 23.07.1951 (1951 to 1961) | Leslie Philip Henry Jeffery (Medical Practitioner) Jack Albert Houston Jeffery (Medical Practitioner) | Book 2185 No. 91 |
| 24.03.1961 (1961 to 1967) | Number 10 Phillip Street Pty Limited | Book 2566 No. 324 |
| 17.08.1967 (1967 to date) | # Council of the City of Parramatta | Book 2853 No. 38 Now 1/791693 |

Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards that part marked (9) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|--|---|---|
| 17.04.1872 (1872 to 1953) | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Book 130 No. 920 |
| 30.11.1953 (Purchase) 20.12.1956 (Confirmation) (1953 to 1957) | James Sidney Greenfield (Master Butcher) | Book 2272 No. 996 (Book 2394 No. 968 – confirmation) |
| 26.03.1957 (1957 to 1967) | Presbyterian Church (New South Wales) Property Trust | Book 2401 No. 842 |
| 31.10.1967 (1967 to date) | # Council of the City of Parramatta | Book 2864 No. 220 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (10) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|--|--|---|
| 17.04.1872 (1872 to 1953) | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Book 130 No. 920 |
| 30.11.1953 (Purchase) 20.12.1956 (Confirmation) (1953 to 1957) | James Sidney Greenfield (Master Butcher) | Book 2272 No. 996 (Book 2394 No. 968 – confirmation) |
| 26.03.1957 (1957 to 1988) | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Book 2401 No. 842 Now 1/771058 |
| 24.03.1988 (1988 to date) | # Council of the City of Parramatta | 1/771058 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (11) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 11.03.1910 (1910 to 1925) | Richard Lambert Hamilton (Storeman) | Book 902 No. 878 |
| 05.06.1925 (1925 to 1959) | Charles Albert Harry Freestone (Manufacturer) | Book 1391 No. 502 Now Vol 6714 Fol 96 |
| 08.05.1959 (1959 to 1959) | Maggie Frances Freestone (Widow) (Section 94 Application not investigated) | Vol 6714 Fol 96 Now Vol 8055 Fol 177 |
| 29.05.1959 (1959 to 1988) | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Vol 8055 Fol 177 Now 1/771058 |
| 24.03.1988 (1988 to date) | # Council of the City of Parramatta | 1/771058 Now 1/791693 |

Denotes Current Registered Proprietor

Email: grolly1@bigpond.net.au



Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards that part marked (12) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 11.03.1910 (1910 to 1925) | Richard Lambert Hamilton (Storeman) | Book 902 No. 878 |
| 05.06.1925 (1925 to 1959) | Charles Albert Harry Freestone (Manufacturer) | Book 1391 No. 502 Now Vol 6714 Fol 96 |
| 08.05.1959 (1959 to 1959) | Maggie Frances Freestone (Widow) (Section 94 Application not investigated) | Vol 6714 Fol 96 Now Vol 8055 Fol 177 |
| 29.05.1959 (1959 to 1967) | Presbyterian Church (New South Wales) Property Trust (Now Uniting Church in Australia Property Trust (N.S.W.) | Vol 8055 Fol 177 Now Vol 10812 Fol's 98 & 100 |
| 31.10.1967 (1967 to date) | # Council of the City of Parramatta | Vol 10812 Fol's 98 & 100 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (13) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|---|---|
| 11.03.1910 (1910 to 1925) | Richard Lambert Hamilton (Storeman) | Book 902 No. 878 |
| 05.06.1925 (1925 to 1959) | Charles Albert Harry Freestone (Manufacturer) | Book 1391 No. 502 Now Vol 6714 Fol 96 |
| 08.05.1959 (1959 to 1959) | Maggie Frances Freestone (Widow) (Section 94 Application not investigated) | Vol 6714 Fol 96 Now Vol 8055 Fol 176 |
| 01.06.1959 (1959 to 1963) | Rumseys Seed Pty Limited | Vol 8055 Fol 176 |
| 22.10.1963 (1963 to date) | # Council of the City of Parramatta | Vol 8055 Fol 176 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (14) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|---|---|
| 22.08.1888 (1888 to 1916) | John Booth (Freeholder) | Book 395 No. 835 |
| 16.03.1916 (1916 to 1925) | Richard Lambert Hamilton (Storeman) | Book 1078 No. 369 |
| 05.06.1925 (1925 to 1959) | Charles Albert Harry Freestone (Manufacturer) | Book 1391 No. 502 Now Vol 6714 Fol 96 |
| 08.05.1959 (1959 to 1959) | Maggie Frances Freestone (Widow) (Section 94 Application not investigated) | Vol 6714 Fol 96 Now Vol 8055 Fol 176 |



Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

Search continued as regards that part marked (14) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 01.06.1959 (1959 to 1963) | Rumseys Seed Pty Limited | Vol 8055 Fol 176 |
| 22.10.1963 (1963 to date) | # Council of the City of Parramatta | Vol 8055 Fol 176 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (15) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|---|---|
| 08.05.1872 (1872 to?) | William Byrnes (Farmer) | Book 395 No. 835 |
| | This parcel of land subsequently formed part of the site of a Right of Way. The next event found for this parcel is the issue of Certificate of Title Volume 6714 Folio 96 dated 31.08.1953 It would appear that Charles Albert Harry Freestone (Manufacturer) may have acquired this parcel by possession | |
| 31.08.1953 (1953 to 1959) | Charles Albert Harry Freestone (Manufacturer) | Vol 6714 Fol 96 |
| 08.05.1959 (1959 to 1959) | Maggie Frances Freestone (Widow) (Section 94 Application not investigated) | Vol 6714 Fol 96 Now Vol 8055 Fol 176 |
| 01.06.1959 (1959 to 1963) | Rumseys Seed Pty Limited | Vol 8055 Fol 176 |
| 22.10.1963 (1963 to date) | # Council of the City of Parramatta | Vol 8055 Fol 176 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (16) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|--|---|---|
| 17.04.1872 (1872 to 1953) | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Book 130 No. 920 |
| 30.11.1953 (Purchase) 20.12.1956 (Confirmation) (1953 to 1957) | James Sidney Greenfield (Master Butcher) | Book 2272 No. 996 (Book 2394 No. 968 – confirmation) |
| Circa 1956 | This parcel became a Council Public Road upon the approval of D.P. 161817 at the Title Office. Such dedication being pursuant to the Local Government Act of 1919 | D.P. 161817 |
| 1956 (1956 to date) | # Council of the City of Parramatta | Public Road by D.P. 161817 Now 1/791693 |

Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards that part marked (17) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|---|---|
| 17.04.1872 (1872 to 1953) | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Book 130 No. 920 |
| 30.11.1953 (1953 to 1956) | James Sidney Greenfield (Master Butcher) | Book 2272 No. 996 |
| 14.11.1956 (1956 to 1985) | Mun Wai Yuen (Green Grocer) | Book 2388 No. 162 Now Vol 13304 Fol 228 |
| 12.06.1985 (1985 to 1987) | Japour Pty Limited | Vol 13304 Fol 228 Now 2/739012 |
| 12.02.1987 (1987 to date) | # Council of the City of Parramatta | 2/739012 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (18) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 27.07.1908 (1908 to 1918) | Isabella Rigelsford (Married Woman) | Book 861 No. 389 |
| 19.08.1918 (1918 to 1949) | Violet Pearle Couper Leabeater (Married Woman) | Book 1135 No. 37 |
| 20.07.1949 (1949 to 1968) | Rumseys Seed Pty Limited | Book 2094 No. 145 Now Vol 7280 Fol 130 |
| 01.03.1968 (1968 to 1969) | N.S.W. Permanent Building Society Limited | Vol 7280 Fol 130 |
| 05.12.1969 (1969 to date) | # Council of the City of Parramatta | Vol 7280 Fol 130 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (19) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 28.06.1921 (1921 to 1927) | Edward Joseph Pearce (Farmer) | Book 1227 No. 357 |
| 21.09.1927 (1927 to 1947) | Walter Riddle (Grazier) (& His deceased estate) | Book 1320 No. 218 |
| 07.10.1947 (1947 to 1950) | Albert William Riddle (Stud Master) | Book 2034 No. 437 |
| 14.03.1950 (1950 to 1950) | Joyce Innes Lucas (Married Woman) | Book 2114 No. 285 |
| 14.03.1950 (1950 to 1974) | Bankers & Traders Insurance Company Limited | Book 2280 No. 131 Now Vol 7280 Fol 131 |
| 02.08.1974 (1974 to date) | # Council of the City of Parramatta | Vol 7280 Fol 131 Now 1/791693 |

Denotes Current Registered Proprietor

Email: grolly1@bigpond.net.au

Service First Registration Pty Ltd Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 22.12.1921 (1921 to 1923) | Beatrice Sutton (Married Woman) | Book 1247 No. 218 |
| 22.12.1923 (1923 to 1926) | John Joseph Condon (Master Butcher) Richard Patrick Condon (Master Butcher) | Book 1324 No. 594 |
| 06.11.1926 (1926 to 1935) | Andrew Derrin (Merchant) James Melville Derrin (Merchant) William McLean Derrin (Merchant) | Book 1455 No. 793 |
| 23.09.1935 (1935 to 1935) | Sidney Joseph Adams (Property Owner) | Book 1729 No. 964 |
| 24.09.1935 (1935 to 1958) | Alfred Ernest Baker (Store Keeper) Arthur Frank Baker (Store Keeper) | Book 1729 No. 965 |
| 05.05.1958 (1958 to 1963) | Rumseys Seed Pty Limited | Book 2442 No. 974 |
| 22.10.1963 (1963 to date) | # Council of the City of Parramatta | Book 2674 No. 852 Now 1/791693 |

As regards that part marked (20) on the attached copy of D.P. 791693

Denotes Current Registered Proprietor

As regards that part marked (21) on the attached copy of D.P. 791693

This parcel of land formed part of lands originally granted to John Byrnes dated 20th May 1840

John Byrnes and his deceased estate provided a Right of Way 10 feet wide during the 1800's

It would seem that the documentary title to the site of this Right of Way remained comprised in name of John Byrnes and his deceased estate up to the date of acquisition by Parramatta City Council by notification in Government Gazette dated 21.07.1967 Folio 2665

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|--------------------------------------|--|--|
| 21.07.1967 (1967 to date) | # Council of the City of Parramatta | Government Gazette dated 21.07.1967 Folio 2665 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (22) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 26.08.1919 (1919 to 1923) | George Sutton (Plumber) | Book 1161 No. 926 |
| 22.10.1923 (1923 to 1926) | John Joseph Condon (Master Butcher) Richard Patrick Condon (Master Butcher) | Book 1324 No. 593 |
| 06.11.1926 (1926 to 1935) | Andrew Derrin (Merchant) James Melville Derrin (Merchant) William McLean Derrin (Merchant) | Book 1455 No. 793 |
| 23.09.1935 (1935 to 1936) | Sidney Joseph Adams (Property Owner) | Book 1729 No. 964 |
| 23.03.1936 (1936 to 1940) | Garnet Evans (Gentleman) Mary Ellen Evans (Married Woman) | Book 1745 No. 222 |

Email: grolly1@bigpond.net.au

Service First Registration Pty Ltd

Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

Search continued as regards that part marked (22) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 15.10.1940 (1940 to 1946) | John Thomas Gettens (Valuator) | Book 1881 No. 172 |
| 06.06.1946 (1946 to 1961) | John Edwin Fitzgerald Burns (Butcher) | Book 1990 No. 477 |
| 23.02.1961 (1961 to 1977) | Burns Animal Food Company Pty Limited | Book 2568 No. 771 |
| 03.06.1977 (1977 to date) | # Council of the City of Parramatta | Government Gazette dated 03.06.1977 Folio 2209 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (23) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 25.03.1915 (1915 to 1960) | Priscilla Jane Beers (Widow) | Book 1053 No. 609 |
| 31.10.1960 (1960 to 1963) | A.J. Yeo Pty Limited | Book 2547 No. 140 |
| 12.08.1963 (1963 to 1964) | Rigneys Holdings Limited | Book 2666 No. 701 |
| 15.12.1964 (1964 to 1970) | Arthurs Food Hall Pty Limited | Book 2729 No. 888 |
| 16.101970 (1970 to date) | # Council of the City of Parramatta | Book 2989 No. 854 Now 1/791693 |

Denotes Current Registered Proprietor

As regards that part marked (24) on the attached copy of D.P. 791693

This parcel of land is described as Right Title and Interest (Possessory Title) in Conveyance Book 2989 No. 854. This parcel of land is contained in the descriptions of the deeds listed below

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 31.10.1960 (1960 to 1963) | A.J. Yeo Pty Limited | Book 2547 No. 140 |
| 12.08.1963 (1963 to 1964) | Rigneys Holdings Limited | Book 2666 No. 701 |
| 15.12.1964 (1964 to 1970) | Arthurs Food Hall Pty Limited | Book 2729 No. 888 |
| 16.101970 (1970 to date) | # Council of the City of Parramatta | Book 2989 No. 854 Now 1/791693 |

Service First Registration Pty Ltd

Suite 102, Level 1, 64 Castlereagh Street Sydney 2000 PO Box 1539 Sydney 2000 DX 189 Sydney

As regards that part marked (25) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|--|
| 07.05.1883 (1883 to 1927) | Ann Beale (Spinster) | Devised by the Will of Ann Beale, the Elder |
| 27.10.1927 (1927 to 1935) | Lee Sing | Book 1491 No. 560 |
| 03.09.1935 (1935 to 1954) | Hermann Schreiber (Financier) | Book 1728 No. 337 |
| 29.09.1954 (1954 to 1968) | Raymond Frank Pantlin (Store Keeper) | Book 2320 No. 988 |
| 16.02.1968 (1968 to date) | # Council of the City of Parramatta | Book 2876 No. 449 Now 1/791693 |

<u># Denotes Current Registered Proprietor</u>

As regards that part highlighted pink and marked (26) on the attached copy of D.P. 791693

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|---|---|
| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
| 17.04.1872 (1872 to 1953) | Frederick Vahrenkamp (Cabinet Maker) (Also known as Frederick William Vahrenkamp) (& His deceased estate) | Book 130 No. 920 |
| 30.11.1953 (1953 to 1956) | James Sidney Greenfield (Master Butcher) | Book 2272 No. 996 |
| | After viewing D.P. 161817 it was found that this parcel was included in the Right of Way It would appear that the next transaction may have been the acquisition by Parramatta City Council This parcel is now comprised in Folio Identifier 1/791693 | |
| 27.07.1990 | # Council of the City of Parramatta | 1/791693 |

Denotes Current Registered Proprietor

As regards that part highlighted orange and marked (27) on the attached copy of D.P. 791693

This parcel of land formed part of lands originally granted to John Byrnes dated 20th May 1840

John Byrnes and his deceased estate provided a Right of Way 10 feet wide during the 1800's

It would seem that the documentary title to the site of this Right of Way remained comprised in name of John Byrnes and his deceased estate up to the date of acquisition by Parramatta City Council. The only gazette that we could find vesting in the Council is the Gazette dated 27.07.1990 Folio 7070

| Date of Acquisition and term held | Registered Proprietor(s) & Occupations where available | Reference to Title at Acquisition and sale |
|-----------------------------------|--|---|
| 27.07.1990 | # Council of the City of Patramatta | 1/791693 |

Denotes Current Registered Proprietor

Yours Sincerely Mark Groll 30 September 2011 (Ph: 0412 199 304)

Email: grolly1@bigpond.net.au



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APPN NO. 3141 4.3 (50) P.187 / John Byunes 2-11p Allot 1A Sec 24 \$ 20.5 40 (Black) TG 5 (52) 1.148 / John Terry Hughes 120 Allot 18 Sec 24 30.9.41 GS+C (BLAR) G SING -TP41(24) V. 11 / John Elder 2r 361/2p Allot 2 Sec 24 Mines of Coal (Black) x 130 90 CV Exis J. (IT.) Byrnes to John Byrnes 571/2p Lot 4 (Red) (includes Pr Infritte) -×130 92 C, Wm Byrnes, 12× 196 259 M + -Prams in Church St apettica, put this debut I tours & TRB 1×360 898 Dis 5-Ynone I fame & lehnen. Though y amen althe Ynone I fame & lehnen. Though y amen althe Ydyddo a dywinny It, edd halts: The Ic P7 390 941 C V Barber r (1.2) Ir26p Pencil (Pt 1d ?Title) -P.13 \$390 943 C . Geo Stone / 11.26p dois marked in The descen of dot. IriGp Pt Allot 2 (Red) CR.ot. Wretd to in desc but not specifically G PSIX 130 854 C Y Elder to Beale + lanted) ~ P.52 2334 728 C 'Est Beale to Geo Stone - 361/2p Pt Allat 2 Peneri - with Rof W 10' w to R / 10' w leading into Church st -1+261/2 p + 361/2 p. (Pencil) -P.534 GII 1973 | Sect ~ Com! Bk See Sh 2 for sketch 1 54 x 660 987 M. da (1) dor do 1 P.55 902 878 C / Bk to Hamilton , Q+B in Green , - × 1075 817 East to Min WKS. by Hamilton over do' do " Re flooding +c' P.7 \$ 395 835 C. Est. Byrnes to Booth / Lost 5 Pericil with Rof W 10' Wide -P16 \$ 1078 369 C / Est Booth to Hamilton do / (RofWay omitted) · P55 \$ 1391 502 C + Hamilton to Aur @ + B. (Green) + Lot 5 (Penol) Redeser as in y Now ¥ 1391 503 M (As in Yellow) / 1467, 498 Dis S ¥14-78 793 M (1.2) dred 13914 502 -¥ 1574 783 M 121 - EO -Rec of Montofs 1478- 193 2 1574-783 25 V 1637 980 Recd in 13.91 × 130 920 C a I P. - Fred - with use of Bol W 10 while × 1399 538 C By Ful Tree to Pintla Counsil 1. 2 Allat 13 1 Black * 2000 TG3 C . Pinstla Cl. to Applt



a some a the second second . . Sh 7 Wing wall of Lennox Bridge IA 22 n 82'5 132'5 ()To R of W for use of land purchased + also st par of lat 2 . (?Specific Gf) Non Excluded from Appn and > Ente 3KGI



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CONVERSION TABLE ADDED IN REGISTRAR GENERAL'S DEPARTMENT

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D625022 (E)





WARNING: CREASING OR FOLDING WILL LEAD TO REJECTION. Ē D.P234508 D 968 13-2. 1968 & C.A. 2233/6321/A/32/17830f2071 Title System: Torrens & Old System Purpose: Subdivision Rof. Map: Parramatta Sh6 # A891807 Last Pian A 917305 DP 25055 (Pt) PLAN OF Subdivision of Lot 7 in D.P. 25055 & Land in plan annexed to dealing Nº A 917305. \$ Part of Land in plan annexed to dealing NºA 891807. Scale: 20 fact to an Inch City: Parramatta Locality: Parnamatta Parish: St. John County: Cumberland John Patrick O'Keefe 1154 Marsden Street, Paramatta registered under the Surveyors Act, 1929. nada */11 da Mul. under Surveyors Act, 1929, as amund Wineteenth December 66 fel la 5.S.Ja D ereby certify that-(a) the requirements of the Local Government A 1919 (other than the requirements for the registi tion of plc 3), and *(b) the requirements of section 34b of the Metropolity Water, Severage and Drainage Act, 1924, omendee, we been complied with by the applicant in relation to t aposed <u>SUBPINISION</u> (insert "new razd" or "sabdivision") set out herei Subdivision No2233/5521/A/32/ 1788 (Signeture) Card Council Clerk, Date 20-12-60 Council Clerk, *NOTE-This part of certificate to be deleted where the opplication is ONLY for the opening of a new rad or where the land to be subdivided its whally autide the area of a perations of the Metropolitan Water, Severage and Drainage Board. * Strike out either (1) or (2). { Insert date of survey. 7807(3)

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| 1933, and was completed on † 2.7.3-1965. Jord Under Surveyors An, 1929, as amended. 10 of Azimth. A - B | 0 |
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| Council Clerk's Certificate. | |
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| , one equirements of section 348 of the Metropolitan , Suwarage, and Drainage Act, 1924, as led. | r dele |
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| -This part of certificate to be delated where the sonly for the opening of a new road or where | the out e |
| be subdivided is wholly outside the eres of the Metropolitan Water Sewerage and Drainage | • 544 |

SURVEYORS REFERENCE 7807



roads or public reserves or create drainage reserves, easements, or restrictions as đ ES See Form ŝ WARNING: CREASING OR FOLDING WILL . LEAD TO R

| DP 228697 FEET INCHES METRES - 0 1/4 0.006 - 0 1/2 0.013 - 1 1/4 0.032 - 1 3/8 0.035 - 1 3/4 0.044 - 2 1/4 0.057 - 4 1/4 0.108 - 5 0.127 - - 6 0.152 - - 7 0.178 - - 8 3/4 0.213 - 7 5/8 0.224 1 6 0.457 1 8 5/6 0.524 1 6 1/2 2.604 2 - 0.610 3 3 1/4 0.721 3 3 1/4 7.78 5.521 11 9 3.591 1.22 <th></th> <th>NVERSION TA</th> <th>BLE ADDED IN</th> | | NVERSION TA | BLE ADDED IN |
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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

FOLIO: 4/610555

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 14331 FOL 36

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| Recorded 28/3/1988 | Number | Type of Instrument TITLE AUTOMATION PROJECT | C.T. Issue LOT RECORDED |
|---------------------------|----------|--|--------------------------------|
| 8/9/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO NOT CREATED |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | CT NOT ISSUED |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
| | *** | END OF SEARCH *** | |

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

FOLIO: 8/25055

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 6821 FOL 223

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|-----------------------------|-----------------------------------|
| 21/11/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 16/3/1989 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
| | * * * | END OF SEARCH *** | |

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Signature of Registrar-General V. C. N. GUINI, GOVERNMENT FRIMICA 3 -÷ į ENTERED . CANCELLATION į : : i. ÷ ; ţ ŝ : ľ NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED **NSTRUMENT** Signature of Registrar-General ł i : NATURE 1 ENTERED : í , i 1 ł i 1 SECOND SCHEDULE (continued) FIRST SCHEDULE (continued) 1 : i i PARTICULARS ; ******1 ; 2 SEE AUTO FOLIO CANCELLE REGISTERED PROPRIETOR ÷ ŧ à ŧ . DAYS : ÷ RUMENT ; ł 1 1. : -NUTAN Reg:R779948 /Doc:CT 10852-096 CT /Rev:24-Feb-2011 /Sts:OK.OK Ref:df /Src:M: 2 01 2 pages) VOI: 19852 FOI 30

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE 21/9/2011 9:15AM

FOLIO: 13/234508

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First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 10852 FOL 96

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|------------|-----------------------------|-----------------------------------|
| 5/6/1987 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 14/3/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 26/9/1989 | DP791693 · | DEPOSITED PLAN | |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - DOCUMENT INQUIRY Document Number: CA22933 Document Type: CONVERSION ACTION Document Status: ACTION COMPLETE Document Status Date: 25/10/2002 Affected Titles: BK 2853 NO 38 Titles Created: 2/228697

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE 21/9/2011 9:15AM

FOLIO: 2/228697

First Title(s): OLD SYSTEM Prior Title(s): CA22933

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|----------------------|----------------------------|
| 8/9/1987 | CA22933 | CONVERSION ACTION | FOLIO CREATED EDITION 1 |
| 24/3/1988 | X299878 | GRANT OF EASEMENT | EDITION 2 |
| 2/3/1989 | Y64150 | CAVEAT | |
| 25/9/1989 | Y613762 | WITHDRAWAL OF CAVEAT | |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
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FOLIO: 3/233971

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 10812 FOL 96

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - DOCUMENT INQUIRY Document Number: FA339 Document Type: CONVERSION ACTION Document Status: ACTION COMPLETE Document Status Date: 6/7/2005 Affected Titles: BK 2401 NO 842 Titles Created: 10812-96 10812-97

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE ------21/9/2011 9:14AM

FOLIO: 1/771058

First Title(s): OLD SYSTEM Prior Title(s): VOL 10812 FOL 97 VOL 10812 FOL 99

| | Recorded | Number | Type of Instrument | C.T. Issue |
|---|-----------|----------|----------------------|----------------------------|
| | | | | |
| | 9/11/1987 | DP771058 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| | 24/3/1988 | X299877 | TRANSFER | EDITION 2 |
| | 24/3/1988 | X299878 | GRANT OF FASEMENT | |
| | 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| | 29/8/1990 | Z212111 | DEPARTMENTAL DEALING | |
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*** END OF SEARCH ***

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| V. C. M. ALONE. GOVCINILY FULLE | ENTERED Signature of Registrar-General | | | | i | | | | | | | | | | | | | | • |
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| | NATURE | <u>Applicatio</u> | | | | | | | ENTERED | | | | | | | | | - | DEGISTOLO CEN |
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LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE ------21/9/2011 9:14AM

FOLIO: 5/233971

First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 10812 FOL 98

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|-----------------------------|-----------------------------------|
| 5/6/1987 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 14/3/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

21/9/2011 9:16AM

FOLIO: 7/233971

First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 10812 FOL 100

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|-----------------------------|-----------------------------------|
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| 5/6/1987 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 14/3/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
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FOLIO: 2C/106040

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 8055 FOL 176

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|-----------------------------|-----------------------------------|
| 31/8/1989 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 2/11/1989 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
| | *** | END OF SEARCH *** | |

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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

FOLIO: 2/739012

First Title(s): OLD SYSTEM Prior Title(s): VOL 13304 FOL 228

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|----------------------|----------------------------|
| | | | |
| 28/11/1986 | DP739012 | DEPOSITED PLAN | FOLIO CREATED EDITION 1 |
| 12/2/1987 | W743850 | TRANSFER | EDITION 2 |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 29/8/1990 | Z212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
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| | 1 DATE | 2-12-1969 | | | | | | | · · · | ; ; ; ; . | • • | | |
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LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE

21/9/2011 9:13AM

FOLIO: 1/535192

First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 11172 FOL 174

| Recorded | Number | Type of Instrument | C.T. Issue |
|------------|----------|-----------------------------|-----------------------------------|
| 28/3/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED |
| 8/7/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | |
| 29/8/1990 | 2212111 | DEPARTMENTAL DEALING | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED |
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| | Signature of Resistrer General | J. Server | | 0 Tz | | | ***** | | | | | | | | | | | ; | | : | | | | | | | | |
| | ENTERED | 23-8-1974 | | | | | | | ····· | : | | ANCELLATION | | | | | | | | | | | **** | | | | | |
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LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE ------21/9/2011 9:13AM

FOLIO: 2/569483

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First Title(s): SEE PRIOR TITLE(S) Prior Title(s): VOL 12495 FOL 115

| Recorded | Number | Type of Instrument | C.T. Issue | | | | |
|------------|----------|-----------------------------|-----------------------------------|--|--|--|--|
| 28/3/1988 | | TITLE AUTOMATION PROJECT | LOT RECORDED FOLIO NOT CREATED | | | | |
| 5/8/1988 | | CONVERTED TO COMPUTER FOLIO | FOLIO CREATED CT NOT ISSUED | | | | |
| 26/9/1989 | DP791693 | DEPOSITED PLAN | | | | | |
| 29/8/1990 | Ż212111 | DEPARTMENTAL DEALING | | | | | |
| 20/11/1990 | DP791693 | DEPOSITED PLAN | FOLIO CANCELLED | | | | |
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Title Search

LEAP Searching An Approved LPI NSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 1/791693 _ _ _ _ _ _ SEARCH DATE TIME EDITION NO DATE _ _ _ _ _ _ _ _ _ _ _ _ ----19/9/2011 7:26 AM 1 20/11/1990 LAND LOT 1 IN DEPOSITED PLAN 791693 AT PARRAMATTA LOCAL GOVERNMENT AREA PARRAMATTA PARISH OF ST JOHN COUNTY OF CUMBERLAND TITLE DIAGRAM DP791693 . FIRST SCHEDULE -----PARRAMATTA CITY COUNCIL (PA62189) SECOND SCHEDULE (0 NOTIFICATIONS) -----NTT. NOTATIONS _ _ _ _ _ _ _ _ . NOTE: THE CERTIFICATE OF TITLE FOR THIS FOLIO OF THE REGISTER DOES NOT INCLUDE SECURITY FEATURES INCLUDED ON COMPUTERISED CERTIFICATES OF TITLE ISSUED FROM 4TH JANUARY, 2004. IT IS RECOMMENDED THAT STRINGENT PROCESSES ARE ADOPTED IN VERIFYING THE IDENTITY OF THE PERSON(S) CLAIMING A RIGHT TO DEAL WITH THE LAND COMPRISED IN THIS FOLIO. UNREGISTERED DEALINGS: NIL *** END OF SEARCH ***

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PRINTED ON 19/9/2011

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

Appendix E

WorkCover Search Documentation



14 OCT 2011

-

Our Ref: D11/128391 Your Ref: Kate Sargent

12 October 2011

Attention: Kate Sargent Douglas Partners PO BOX 472 West Ryde NSW 1685

Dear Ms Sargent,

RE SITE: 12-14 Phillip St & 333 Church St Parramatta NSW

I refer to your site search request received by WorkCover NSW on 4 October 2011 requesting information on licences to keep dangerous goods for the above site.

A search of the Stored Chemical Information Database (SCID) and the microfiche records held by WorkCover NSW has not located any records pertaining to the above mentioned premises.

If you have any further queries please contact the Dangerous Goods Licensing Team on (02) 4321 5500.

Yours Sincerely

Brent Jones Senior Licensing Officer Dangerous Goods Team



Appendix F

Section 149 Certificates



PLANNING CERTIFICATE

CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979 as amended 1998

Douglas Partners Pty Ltd 96 Hermitage Road WEST RYDE NSW 2114

Certificate No: 2011/4259

Fee: \$133.00

- Issue Date: 11 October 2011
- **Receipt No:** 3479836
- Applicant Ref: KATHRYNE SARGENT

DESCRIPTION OF LAND

| Address: | 12-14 Phillip Street | | | | | | | | |
|----------|----------------------|-----|------|--|--|--|--|--|--|
| | PARRAMATTA | NSW | 2150 | | | | | | |

Lot Details: LOT 1 DP 791693

SECTION A

The following Environmental Planning Instrument to which this certificate relates applies to the land:

Parramatta City Centre Local Environmental Plan 2007 (as amended)

For the purpose of **Section 149(2)** it is advised that as the date of this certificate the abovementioned land is affected by the matters referred to as follows:

PARRAMATTA CITY COUNCIL

Printed Date: 12/10/2011

30 Darcy Street Parramatta NSW 2150Phone 02 9806 5050Fax 02 9806 5917DX 8279 ParramattaPO Box 32 Parramatta NSW 2124ABN 49 907 174 773www.parracity.nsw.gov.au



The land being zoned:

Zone B4 Mixed Use

1 Objectives of zone B4 Mixed Use

- To provide a mixture of compatible land uses.
- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.
- To create opportunities to improve the public domain and pedestrian links within the Mixed Use Zone.
- To support the higher order Commercial Core Zone while providing for the daily commercial needs of the locality, including:
 - · commercial and retail development,
 - cultural and entertainment facilities that cater for a range of arts and cultural activity, including events, festivals, markets and outdoor dining,
 - tourism, leisure and recreation facilities,
 - social, education and health services,
 - high density residential development.
 - To protect and enhance the unique qualities and character of special areas within the Parramatta city centre.

2 Permitted without consent

Nil

3 Permitted with consent

Any other development not otherwise specified in item 2 or 4

4 Prohibited

Car parks (except those required by this Plan or public car parking provided by or on behalf of the Council); Caravan parks; Dual occupancies; Dwelling houses; Extractive industries; Home occupation (sex services); Industries; Light industrial retail outlets; Mines; Vehicle body repair workshops; Warehouse or distribution centres



Zone RE1 Public Recreation

1 Objectives of zone RE1 Public Recreation

- To enable land to be used for public open space or recreational purposes.
- To provide a range of recreational settings and activities and compatible land uses.
- To protect and enhance the natural environment for recreational purposes.
- To conserve, enhance and promote the natural assets and cultural heritage significance of Parramatta Park.
- To recognise and increase Parramatta Park's role as a community and recreational resource for the people of Parramatta and Western Sydney.
- To improve public access to Parramatta Park and the Parramatta River and to ensure the Park forms an extension to the civic and public spaces of the city centre.
- To achieve environmental management best practice that promotes the natural assets of Parramatta Park.
- To protect the ecological, scenic and historical values along the Parramatta River.
- To allow for water-based recreation and related uses.
- To create a riverfront recreational opportunity that provides for a high quality relationship between the built and natural environment.

2 Permitted without consent

Environmental facilities; Environmental protection works

3 Permitted with consent

Boat sheds; Car parks (but only as required by this Plan or public car parking provided by or on behalf of the Council); Child care centres; Community facilities; Cycle ways; Fences; Information and education facilities; Jetties; Kiosks; Markets; Picnic facilities; Recreation areas; Recreation facilities (indoor); Recreation facilities (outdoor); Restaurants; Roads; Sea walls; Slipways; Walking trails; Water recreation structures; Waterway access stairs; Wharves

4 Prohibited

Any other development not otherwise specified in item 2 or 3

Unzoned Land

- Development may be carried out on unzoned land only with consent.
- Before granting consent, the consent authority:

(a) must consider whether the development will impact on adjoining zoned land and, if so, consider the objectives for development in the zones of the adjoining land, and

(b) must be satisfied that the development is appropriate and is compatible with permissible land uses in any such adjoining land.



SECTION B

The land is affected by State Environmental Planning Policies and Regional Environmental Plans as detailed in Annexure "B1".

The land is not affected by Draft Environmental Plans which have been placed on Public Exhibition but which has not yet been prescribed.

Is affected by Parramatta City Centre Development Control Plan 2007 as amended. This development control plan complements and reinforces the aims and objectives of the Parramatta City Centre Local Environmental Plan 2007 by establishing guidelines and controls for the future built form of Parramatta City Centre.

Parramatta Development Control Plan (DCP) as amended for Sex Services and Restricted Premises applies to the land.

Parramatta Development Control Plan (DCP) for Places of Public Worship applies to all land within the City of Parramatta.

The Parramatta Child Care Centres Development Control Plan applies to all land within the City of Parramatta.

The Minister for Planning and Infrastructure has issued directions that provisions of an EPI do not apply to certain Part 4 development where a concept plan has been approved under Part 3A.

The City Centre Civic Improvement Plan 2007 applies to this land.

The land is affected by a Tree Preservation Order.

Council has not been notified of an order under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

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

- (a) Division 2 of Part 3 of the Roads Act 1993.
- (b) Any Environmental Planning Instrument.
- (c) Any Resolution of Council.

The land is not affected by Section 15 of the Mine Subsidence Compensation Act 1961 proclaiming land to be a Mine Subsidence District.

The land is not bushfire prone land.

An item of environmental heritage IS NOT situated on the land.

The land IS NOT in a conservation area.

The Director General with responsibility for the Threatened Species Conservation Act 1995 has not advised Council that the land includes or comprises a critical habitat.



The Parramatta City Centre Local Environmental Plan 2007 clause 25 provides for acquisition of certain lands by public authorities.

The land is not affected by Section 38 or 39 of the Coastal Protection Act 1979.

Has an order been made under Part 4D of the Coastal Protection Act 1979 in relation to emergency coastal protection works (within the meaning of the Act) on the land (or on public land adjacent to that land)?

Has Council been notified under section 55x of the Coastal Protection Act 1979 that emergency coastal protection works (within the meaning of the Act) have been placed on the land (or on public land adjacent to that land)? **NO**

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

Council has not adopted a policy to restrict the development of the land by reason of the likelihood of projected sea level rise (coastal protection), tidal inundation, subsidence or any other risk.

Site Compatibility Certificate

At the date of issue of this certificate Council is not aware of any

- a. Site compatibility certificate (affordable rental housing),
- b. Site compatibility certificate (infrastructure),
- c. Site compatibility certificate (seniors housing)

in respect to the land issued pursuant to the Environmental Planning & Assessment Amendment (Site Compatibility Certificates) Regulation 2009 (NSW).

The land is **not affected** by any of the matters contained in Clause 59(2) as amended in the Contaminated Land Management Act 1997 – as listed

- a. that the land to which the certificate relates is significantly contaminated land
- b. that the land to which the certificate relates is subject to a management order
- c. that the land to which the certificate relates is the subject of an approved voluntary management proposal
- d. that the land to which the certificate relates is subject to an ongoing maintenance order
- e. that the land to which the certificate relates is the subject of a site audit statement

Council has adopted a policy covering the entire City of Parramatta to restrict development of any land by reason of the likelihood of flooding.



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

This does not constitute a Complying Development Certificate under section 85 of the EP&A Act

This information only addresses matters raised in **Clauses 1.17A (c) and (d) and 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

It is your responsibility to ensure that you comply with the general requirements of the State Environmental Planning Policy (Exempt and Complying Codes) 2008. Failure to comply with these provisions may mean that a Complying Development Certificate issued under the provisions of State Environmental Planning Policy (Exempt and Complying Codes) 2008 is invalid.

General Housing Code

Complying Development pursuant to the General Housing Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.19**.

• land is identified on an Acid Sulfate Soils Map as being part Class 1,

Housing Alterations Code

Complying Development pursuant to the Housing Alterations Code **may** be carried out on the land under **Clause 1.17A (c) and (d)**

Complying Development pursuant to the Housing Alterations Code **may** be carried out on the land under **Clause 1.19**.

General Development Code

Complying development pursuant to the General Development Code **may** be carried out on the land under **Clause 1.17A (c) and (d)**

Complying Development pursuant to the General Development Code **may** be carried out on the land under **Clause 1.19**

Demolition Code

Complying development pursuant to the Demolition Code **may** be carried out on the land under **Clause 1.17A (c) and (d)**

Complying Development pursuant to the Demolition Code **may** be carried out on the land under **Clause 1.19**.

General Commercial and Industrial Code

Complying development pursuant to the General Commercial and Industrial Code **may** be carried out on the land under **Clause 1.17A (c) and (d)**

Complying Development pursuant to the General Commercial and Industrial Code **may** be carried out on the land under **Clause 1.19**


SPECIAL NOTES

Acid Sulphate Soils Class 1 – development consent is required for the carrying out of works described in the Table clause 33B of the Parramatta City Centre Local Environmental Plan 2007.

Acid Sulphate Soils Class 4 – development consent is required for the carrying out of works described in the Table clause 33B of the Parramatta City Centre Local Environmental Plan 2007.

Applicants for Sections 149 Certificates are advised that Council does not hold sufficient information to fully detail the effect of any encumbrances on the title of the subject land. The information available to Council is provided on the basis that neither Council nor its servants hold out advice or warrant to you in any way its accuracy, nor shall Council or its servants, be liable for any negligence in the preparation of that information. Further information should be sought from relevant Statutory Departments.

<u>SECTION C</u> The following additional information is issued under Section 149(5)

Pursuant to S149(5) the Council supplies information as set out below on the basis that the Council takes no responsibility for the accuracy of the information. The information if material should be independently checked by the applicant.

Aboriginal Heritage – High Sensitivity – potential to contain items of Aboriginal heritage. Contact Council's Customer Service/Duty Planner (02) 9806 5050 for more information.

This site is coloured on the Key Sites Map and refers to Clause 22B Design Excellence of the Parramatta City Centre Local Environmental Plan 2007.

The land is affected by a 100 year Average Recurrence Interval flood as indicated by Council's current flooding information. As such Council is required to take that into account when determining any development application made in respect of the land.

Further information is available at the Design Services Section within Council's Technical Services Unit.

Additional advice should be also sought from an appropriately qualified person as to the extents and potential hazards associated with the likely flooding of the land. The names of qualified persons maybe obtained from the Institution of Engineers Australia.



ANNEXURE "B1"

issued pursuant to Section 149 of the Environmental Planning and Assessment Act 1979. The following information is supplied in respect of Section 149 and embodies the requirements of Department of Planning Circular No. A2 dated 17 March 1989 and the Ministerial Notification dated 15 December 1986.

STATE ENVIRONMENTAL PLANNING POLICY NO.6 - Number of Storeys in a Building

STATE ENVIRONMENTAL PLANNING POLICY NO.10 - Retention of Low Cost Rental Accommodation STATE ENVIRONMENTAL PLANNING POLICY NO.19 - Bushland in Urban Areas STATE ENVIRONMENTAL PLANNING POLICY NO.21 - Caravan Parks STATE ENVIRONMENTAL PLANNING POLICY NO.22 - Shops and Commercial Premises STATE ENVIRONMENTAL PLANNING POLICY NO.32 - Urban Consolidation (Redevelopment of Urban Land) STATE ENVIRONMENTAL PLANNING POLICY NO.33 - Hazardous and Offensive Development STATE ENVIRONMENTAL PLANNING POLICY NO.55 - Remediation of Land STATE ENVIRONMENTAL PLANNING POLICY NO.64 - Advertising and Signage STATE ENVIRONMENTAL PLANNING POLICY NO.65 - Design Quality of Residential Flat Development. STATE ENVIRONMENTAL PLANNING POLICY NO.70 - Affordable Housing (Revised Schemes) STATE ENVIRONMENTAL PLANNING POLICY - (Housing for Seniors or People with a Disability) 2004 STATE ENVIRONMENTAL PLANNING POLICY - (Building Sustainability Index: BASIX) 2004 STATE ENVIRONMENTAL PLANNING POLICY - (Major Projects) 2005 STATE ENVIRONMENTAL PLANNING POLICY - (Mining, Petroleum Production and Extractive Industries) 2007 STATE ENVIRONMENTAL PLANNING POLICY (Temporary Structures and Places of Public Entertainment) 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 (Urban Renewal) 2010 SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.9 (No.2) - Extractive Industries SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.18 - Public Transport Corridors



SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.24 - Homebush Bay Area

SYDNEY REGIONAL ENVIRONMENTAL PLAN – (Sydney Harbour Catchment) 2005

N.B. All enquiries as to the application of Draft, State and Regional Environmental Planning Policies should be directed to The Department of Infrastructure Planning and Natural Resources – 23-33 Bridge Street Sydney NSW 2000.

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Dr Robert Lang Chief Executive Officer

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per

dated 11 October 2011



PLANNING CERTIFICATE

CERTIFICATE UNDER SECTION 149

Environmental Planning and Assessment Act, 1979 as amended 1998

Douglas Partners Pty Ltd 96 Hermitage Road WEST RYDE NSW 2114

Certificate No: 2011/4249

Fee: \$133.00

Issue Date: 10 October 2011

Receipt No: 3479836

Applicant Ref: KATHRYNE SARGENT

DESCRIPTION OF LAND

| Address: | 333 Church Stre | et | |
|----------|-----------------|-----|------|
| | PARRAMATTA | NSW | 2150 |

Lot Details: Lot 3 DP 825045

SECTION A

The following Environmental Planning Instrument to which this certificate relates applies to the land:

Parramatta City Centre Local Environmental Plan 2007 (as amended)

For the purpose of **Section 149(2)** it is advised that as the date of this certificate the abovementioned land is affected by the matters referred to as follows:

Printed Date: 10/10/2011

PARRAMATTA CITY COUNCIL 30 Darcy Street Parramatta NSW 2150Phone 02 9806 5050Fax 02 9806 5917DX 8279 ParramattaPO Box 32 Parramatta NSW 2124ABN 49 907 174 773www.parracity.nsw.gov.au



The land being zoned: Zone B4 Mixed Use

1 Objectives of zone B4 Mixed Use

- To provide a mixture of compatible land uses.
- To integrate suitable business, office, residential, retail and other development in accessible locations so as to maximise public transport patronage and encourage walking and cycling.
- To create opportunities to improve the public domain and pedestrian links within the Mixed Use Zone.
- To support the higher order Commercial Core Zone while providing for the daily commercial needs of the locality, including:
 - commercial and retail development,
 - cultural and entertainment facilities that cater for a range of arts and cultural activity, including events, festivals, markets and outdoor dining,
 - · tourism, leisure and recreation facilities,
 - social, education and health services,
 - high density residential development.
 - To protect and enhance the unique qualities and character of special areas within the Parramatta city centre.

2 Permitted without consent

Nil

3 Permitted with consent

Any other development not otherwise specified in item 2 or 4

4 Prohibited

Car parks (except those required by this Plan or public car parking provided by or on behalf of the Council); Caravan parks; Dual occupancies; Dwelling houses; Extractive industries; Home occupation (sex services); Industries; Light industrial retail outlets; Mines; Vehicle body repair workshops; Warehouse or distribution centres



SECTION B

The land is affected by State Environmental Planning Policies and Regional Environmental Plans as detailed in Annexure "B1".

The land is not affected by Draft Environmental Plans which have been placed on Public Exhibition but which has not yet been prescribed.

Is affected by Parramatta City Centre Development Control Plan 2007 as amended. This development control plan complements and reinforces the aims and objectives of the Parramatta City Centre Local Environmental Plan 2007 by establishing guidelines and controls for the future built form of Parramatta City Centre.

Parramatta Development Control Plan (DCP) as amended for Sex Services and Restricted Premises applies to the land.

Parramatta Development Control Plan (DCP) for Places of Public Worship applies to all land within the City of Parramatta.

The Parramatta Child Care Centres Development Control Plan applies to all land within the City of Parramatta.

The Minister for Planning has issued directions that provisions of an EPI do not apply to certain Part 4 development where a concept plan has been approved under Part 3A.

The City Centre Civic Improvement Plan 2007 applies to this land.

The land is affected by a Tree Preservation Order.

Council has not been notified of an order under the Trees (Disputes Between Neighbours) Act 2006 to carry out work in relation to a tree on the land.

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

- (a) Division 2 of Part 3 of the Roads Act 1993.
- (b) Any Environmental Planning Instrument.
- (c) Any Resolution of Council.

The land is not affected by Section 15 of the Mine Subsidence Compensation Act 1961 proclaiming land to be a Mine Subsidence District.

The land is not bushfire prone land.

Heritage – Is affected by schedule 5 of Parramatta City Centre Local Environmental Plan 2007.

Development consent is required of any proposed development, including demolition, alterations, additions, erection of a new building and subdivision on the subject site pursuant to clause 35 of Parramatta City Centre Local Environmental Plan 2007.



The Director General with responsibility for the Threatened Species Conservation Act 1995 has not advised Council that the land includes or comprises a critical habitat.

The Parramatta City Centre Local Environmental Plan 2007 clause 25 provides for acquisition of certain lands by public authorities.

The land is not affected by Section 38 or 39 of the Coastal Protection Act 1979.

Has an order been made under Part 4D of the Coastal Protection Act 1979 in relation to emergency coastal protection works (within the meaning of the Act) on the land (or on public land adjacent to that land)? **NO**

Has Council been notified under section 55x of the Coastal Protection Act 1979 that emergency coastal protection works (within the meaning of the Act) have been placed on the land (or on public land adjacent to that land)? **NO**

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

Council has not adopted a policy to restrict the development of the land by reason of the likelihood of projected sea level rise (coastal protection), tidal inundation, subsidence or any other risk.

Site Compatibility Certificate

At the date of issue of this certificate Council is not aware of any

- a. Site compatibility certificate (affordable rental housing),
- b. Site compatibility certificate (infrastructure),
- c. Site compatibility certificate (seniors housing)

in respect to the land issued pursuant to the Environmental Planning & Assessment Amendment (Site Compatibility Certificates) Regulation 2009 (NSW).

The land is **not affected** by any of the matters contained in Clause 59(2) as amended in the Contaminated Land Management Act 1997 – as listed

- a. that the land to which the certificate relates is significantly contaminated land
- b. that the land to which the certificate relates is subject to a management order
- c. that the land to which the certificate relates is the subject of an approved voluntary management proposal
- d. that the land to which the certificate relates is subject to an ongoing maintenance order



e. that the land to which the certificate relates is the subject of a site audit statement

Council has adopted a policy covering the entire City of Parramatta to restrict development of any land by reason of the likelihood of flooding.

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

This does not constitute a Complying Development Certificate under section 85 of the EP&A Act

This information only addresses matters raised in **Clauses 1.17A (c) and (d) and 1.19** of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008.

It is your responsibility to ensure that you comply with the general requirements of the State Environmental Planning Policy (Exempt and Complying Codes) 2008. Failure to comply with these provisions may mean that a Complying Development Certificate issued under the provisions of State Environmental Planning Policy (Exempt and Complying Codes) 2008 is invalid.

General Housing Code

Complying Development pursuant to the General Housing Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.17A.**

 land comprises, or contains an item of environmental heritage (that is listed on the State Heritage Register or that is subject to an interim heritage order under the *Heritage Act 1977* or that is identified as an item of environmental heritage in an environmental planning instrument),

Housing Alterations Code

Complying Development pursuant to the Housing Alterations Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.17A.**

 land comprises, or contains an item of environmental heritage (that is listed on the State Heritage Register or that is subject to an interim heritage order under the *Heritage Act 1977* or that is identified as an item of environmental heritage in an environmental planning instrument),

General Development Code

Complying Development pursuant to the General Development Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.17A.**

 land comprises, or contains an item of environmental heritage (that is listed on the State Heritage Register or that is subject to an interim heritage order under the *Heritage Act 1977* or that is identified as an item of environmental heritage in an environmental planning instrument),



Demolition Code

Complying Development pursuant to the Demolition Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.17A**

 land comprises, or contains an item of environmental heritage (that is listed on the State Heritage Register or that is subject to an interim heritage order under the *Heritage Act 1977* or that is identified as an item of environmental heritage in an environmental planning instrument),

General Commercial and Industrial Code

Complying Development pursuant to the General Commercial and Industrial Code **may not** be carried out on the land. The land is affected by specific land exemptions under **Clause 1.17A**

 land comprises, or contains an item of environmental heritage (that is listed on the State Heritage Register or that is subject to an interim heritage order under the *Heritage Act 1977* or that is identified as an item of environmental heritage in an environmental planning instrument),

SPECIAL NOTES

Acid Sulphate Soils Class 4 – development consent is required for the carrying out of works described in the Table clause 33B of the Parramatta City Centre Local Environmental Plan 2007.

Applicants for Sections 149 Certificates are advised that Council does not hold sufficient information to fully detail the effect of any encumbrances on the title of the subject land. The information available to Council is provided on the basis that neither Council nor its servants hold out advice or warrant to you in any way its accuracy, nor shall Council or its servants, be liable for any negligence in the preparation of that information. Further information should be sought from relevant Statutory Departments.

SECTION C

The following additional information is issued under Section 149(5)

Pursuant to S149(5) the Council supplies information as set out below on the basis that the Council takes no responsibility for the accuracy of the information. The information if material should be independently checked by the applicant.

Aboriginal Heritage – High Sensitivity – potential to contain items of Aboriginal heritage. Contact Council's Customer Service/Duty Planner (02) 9806 5050 for more information.

This site is coloured on the Key Sites Map and refers to Clause 22B Design Excellence of the Parramatta City Centre Local Environmental Plan 2007.



The land is affected by a 100 year Average Recurrence Interval flood as indicated by Council's current flooding information. As such Council is required to take that into account when determining any development application made in respect of the land.

Further information is available at the Design Services Section within Council's Technical Services Unit.

Additional advice should be also sought from an appropriately qualified person as to the extents and potential hazards associated with the likely flooding of the land. The names of qualified persons maybe obtained from the Institution of Engineers Australia.

ANNEXURE "B1"

issued pursuant to Section 149 of the Environmental Planning and Assessment Act 1979. The following information is supplied in respect of Section 149 and embodies the requirements of Department of Planning Circular No. A2 dated 17 March 1989 and the Ministerial Notification dated 15 December 1986.

STATE ENVIRONMENTAL PLANNING POLICY NO.6 - Number of Storeys in a Building

STATE ENVIRONMENTAL PLANNING POLICY NO.10 - Retention of Low Cost Rental Accommodation

STATE ENVIRONMENTAL PLANNING POLICY NO.19 - Bushland in Urban Areas

STATE ENVIRONMENTAL PLANNING POLICY NO.21 - Caravan Parks

STATE ENVIRONMENTAL PLANNING POLICY NO.22 - Shops and Commercial Premises

STATE ENVIRONMENTAL PLANNING POLICY NO.32 - Urban Consolidation (Redevelopment of Urban Land)

STATE ENVIRONMENTAL PLANNING POLICY NO.33 - Hazardous and Offensive Development

STATE ENVIRONMENTAL PLANNING POLICY NO.55 - Remediation of Land

STATE ENVIRONMENTAL PLANNING POLICY NO.64 - Advertising and Signage

- STATE ENVIRONMENTAL PLANNING POLICY NO.65 Design Quality of Residential Flat Development.
- STATE ENVIRONMENTAL PLANNING POLICY NO.70 Affordable Housing (Revised Schemes)
- STATE ENVIRONMENTAL PLANNING POLICY (Housing for Seniors or People with a Disability) 2004

STATE ENVIRONMENTAL PLANNING POLICY - (Building Sustainability Index: BASIX) 2004

STATE ENVIRONMENTAL PLANNING POLICY -- (Major Projects) 2005

STATE ENVIRONMENTAL PLANNING POLICY – (Mining, Petroleum Production and Extractive Industries) 2007



STATE ENVIRONMENTAL PLANNING POLICY (Temporary Structures and Places of Public Entertainment) 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 (Urban Renewal) 2010

SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.9 (No.2) - Extractive Industries

SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.18 - Public Transport Corridors

SYDNEY REGIONAL ENVIRONMENTAL PLAN NO.24 - Homebush Bay Area

SYDNEY REGIONAL ENVIRONMENTAL PLAN – (Sydney Harbour Catchment) 2005

N.B. All enquiries as to the application of Draft, State and Regional Environmental Planning Policies should be directed to The Department of Infrastructure Planning and Natural Resources – 23-33 Bridge Street Sydney NSW 2000.

Dr Robert Lang Chief Executive Officer

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per /

dated 10 October 2011

Appendix G

QA/QC Documentation



QA/QC PROCEDURES AND RESULTS

Q1 - FIELD QUALITY ASSURANCE AND QUALITY CONTROL

The field QC procedures for sampling as prescribed in Douglas Partners Field Procedures Manual were followed at all times during the assessment.

Sample Collection

Sample collection procedures and dispatch for soil and groundwater are reported in Section 9, Quality Assurance and Quality Control.

Logs

Logs for each sampling location were recorded in the field. The individual samples were recorded on the field logs along with location, depth, initials of sampler, duplicate locations and duplicate type. Borehole Logs are presented in Appendix H.

Chain of Custody

Analysis to be performed on each sample and the dispatch courier were recorded on the COCs and accompanied samples to the analytical laboratory. Signed copies of COCs are presented in Appendix I, following the laboratory reports.

Sample Splitting Techniques

Replicate samples were collected in the field as a measure of accuracy, precision and repeatability of the results. Field replicate samples for soil were collected from the same location and an identical depth to the primary sample. Equal portions of the primary sample were placed into the sampling jars and sealed. The sample was not homogenised in a bowl and then split to prevent the loss of volatiles from the soil. Replicate samples were labelled with a DP identification number, recorded on DP bore logs, so as to conceal their relationship to their primary sample from the analysing laboratory.

Replicate Frequency

Field sampling comprised replicate sampling, at a rate of approximately one replicate sample for every twenty original samples for intra and inter-laboratory analysis.

Trip Spikes

According to the NSW EPA *Guidelines for Consultants Reporting on Contaminated Sites* (1997), laboratory prepared trip spikes are to be taken into the field, subjected to the same preservation methods as the field samples, then analysed, for the purposes of determining the losses in volatile organics incurred prior to reaching the laboratory.

The laboratory prepared two soil trip spikes which were preserved in the standard manner and taken into the field unopened. The volatile organic recovery rates are shown below. At this stage, the laboratory has no standard acceptance limits in recovery rates as results from in-house laboratory controls often vary. Results in Table Q1 indicate that the percentage losses for BTEX during the trips were minimal and therefore appropriate preservation techniques were employed.



Table Q1: Trip Spike Results

| Sample ID | Motrix | Recovery (%) | | | | | | | |
|----------------|--------|--------------|---------|---------------|------------|----------|--|--|--|
| Sample ID | Watrix | Benzene | Toluene | Ethyl Benzene | m+p xylene | o-xylene | | | |
| TS1-22/09/2011 | Soil | 104 | 104 | 107 | 107 | 107 | | | |
| TS2-23/09/2011 | Soil | 105 | 105 | 102 | 102 | 102 | | | |

Trip Blanks

Laboratory prepared soil trip blanks were taken out to the field unopened on both days of fieldwork, subjected to the same preservation methods as the field samples, then analysed for the purposes of determining the transfer of contaminants into the blank samples incurred prior to reaching the laboratory. The result of the laboratory analysis for the trip blanks is shown in Table Q2.

| | | TPH | | | BTEX | | |
|--------------------|--------|--------------------------------|---------|---------|---------------|---------------|----------|
| Sample ID | Matrix | C ₆ -C ₉ | Benzene | Toluene | Ethyl Benzene | m+p xylene | o-xylene |
| TB1- 22/09/2011 | Soil | <25 | <0.2 | <0.5 | <1.0 | <2.0 | <1.0 |
| TB2- 23/09/2011 | Soil | <25 | <0.5 | <0.5 | <1.0 | <2.0 | <1.0 |

Table Q2: Trip Blank Results

Levels of analytes were all below detection limits indicating that cross contamination had not occurred during the course of the round trip from the site to the laboratory.

Field Instrument Calibration

The groundwater parameters were measured with a 90FL-T water quality meter. The water quality meter was calibrated prior to use in the field with pH buffer solutions of 4 and 10.

All soil samples were screened for the presence of Total Photo-Ionisable Compounds (TOPIC) using a calibrated Photo-Ionisation Detector (PID). The PID was calibrated by Douglas Partners prior to fieldwork with Isobutylene gas.

Relative Percentage Difference

Intra- and inter-laboratory replicates were conducted as an internal check of the reproductively within the primary laboratory (Envirolab Pty Ltd) and the inter-laboratory, SGS Laboratories, as a measure of consistency of sampling techniques. Soil samples and their replicate pairs were analysed by Envirolab for heavy metals, TPH, BTEX and PAH. One replicate pair was analysed by SGS Laboratories as a measure of precision between laboratories. A groundwater sample and its replicate pair were additionally tested for heavy metals, TPH and BTEX. A measure of the consistency of results for field samples is derived by the calculation of relative percentage differences (RPDs) for duplicate samples. Laboratory reports state that a RPD of \pm 30-50% is considered acceptable. Laboratory results also note that the RPDs should be ignored where results are less than 5 times the PQL. Comparative laboratory results of original and replicate samples are shown below in Tables Q3 – Q6.



| Sample ID | | Heavy Metals | | | | | | РАН | | |
|--------------|---------|--------------|----------|--------|------|---------|--------|------|--------|---------------------|
| | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | B(a)P | РАН |
| MW02/0.5-0.6 | <4 | <0.5 | 3 | 3 | 4 | <0.1 | 3 | 5 | 0.08 | 0.68 |
| Dup02 | <4 | <0.5 | 4 | 3 | 11 | <0.1 | 2 | 9 | < 0.05 | <pql< td=""></pql<> |
| PQL | 4 | 0.5 | 1 | 1 | 1 | 0.1 | 1 | 1 | 0.05 | 0.1 |
| Difference | 0 | 0 | 1 | 0 | 7 | 0 | 1 | 4 | NA | NA |
| RPD (%) | 0 | 0 | 29 | 0 | 93 | 0 | 40 | 57 | NA | NA |

Table Q3: Comparative Results of Replicate Soil Sample Analysis - Intra-laboratory Results

| Sample ID | Total Hydroca | Petroleum arbons (TPH) | Мо | Monocyclic Aromatic Hydrocarbons (BTEX) | | | | | |
|--------------|------------------|----------------------------------|-----------|---|--------------|-----------------|--|--|--|
| | C6-C9 | C ₁₀ -C ₃₆ | Benzene | Toluene | Ethylbenzene | Total Xylene | | | |
| MW02/0.5-0.6 | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | | | |
| Dup02 | <25 | <250 | <0.2 | <0.5 | <1.0 | <2.0 | | | |
| PQL | 25 | 250 | 0.5 / 0.2 | 0.5 | 1 / 0.5 | 3/1/0.5 | | | |
| Difference | 0 | 0 | 0 | 0 | 0 | 0 | | | |
| RPD (%) | 0 | 0 | 0 | 0 | 0 | 0 | | | |

Table Q4: Comparative Results of Replicate Soil Sample Analysis - Inter-laboratory Results

| Sample ID | | Heavy Metals | | | | | | | | Н |
|--------------|---------|--------------|----------|--------|------|---------|--------|------|-------|-----|
| | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | B(a)P | PAH |
| BH08/0.1-0.2 | <4.0 | <0.5 | 140 | 32 | 6 | <0.1 | 120 | 62 | <0.05 | 0.2 |
| Dup04 | <3.0 | 0.6 | 120 | 29 | 6 | <0.05 | 110 | 78 | <0.1 | 1.1 |
| PQL | 4 | 0.5 | 1 | 1 | 1 | 0.1 | 1 | 1 | 0.05 | 0.1 |
| Difference | 0 | NA | 20 | 3 | 0 | NA | 10 | 16 | NA | 0.9 |
| RPD (%) | 0 | NA | 15 | 10 | 0 | NA | 8.7 | 22.9 | NA | 138 |

| Sample ID | Total Petroleum Hydrocarbons (TPH) | | Monocyclic Aromatic Hydrocarbons (BTEX) | | | | | |
|--------------|--|---|---|---------|--------------|-----------------|--|--|
| | C6-C9 | C ₁₀ -C ₃₆ | Benzene | Toluene | Ethylbenzene | Total Xylene | | |
| BH08/0.1-0.2 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | | |
| Dup04 | <20 | <120 | <0.1 | <0.1 | <0.1 | <0.2 | | |
| PQL | 25 | 250 | 0.5 / 0.2 | 0.5 | 1 / 0.5 | 3 / 1 / 0.5 | | |
| Difference | NA | NA | NA | NA | NA | NA | | |
| RPD (%) | NA | NA | NA | NA | NA | NA | | |

Table Q5: Comparative Results of Replicate Soil Sample Analysis - Intra-laboratory Results

| Sample ID | | Heavy Metals | | | | | | | РАН | |
|--------------|---------|--------------|----------|--------|------|---------|--------|------|--------|---------------------|
| | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc | B(a)P | РАН |
| BH01/1.0-1.1 | <4.0 | <0.5 | 8 | 6 | 9 | <0.1 | 4 | 12 | < 0.05 | <pql< td=""></pql<> |
| Dup08 | <4.0 | <0.5 | 8 | 6 | 9 | <0.1 | 4 | 11 | < 0.05 | <pql< td=""></pql<> |
| PQL | 4 | 0.5 | 1 | 1 | 1 | 0.1 | 1 | 1 | 0.05 | 0.1 |
| Difference | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| RPD (%) | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 8.7 | 0 | 0 |

| Sample ID | Total Hydr | Petroleum ocarbons (TPH) | Monocyclic Aromatic Hydrocarbons (BTEX) | | | | | |
|--------------|---------------|---|---|---------|--------------|-----------------|--|--|
| | C6-C9 | C ₁₀ -C ₃₆ | Benzene | Toluene | Ethylbenzene | Total Xylene | | |
| BH01/1.0-1.1 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | | |
| Dup08 | <25 | <pql< td=""><td><0.2</td><td><0.5</td><td><1.0</td><td><2.0</td></pql<> | <0.2 | <0.5 | <1.0 | <2.0 | | |
| PQL | 25 | 250 | 0.5 / 0.2 | 0.5 | 1 / 0.5 | 3/1/0.5 | | |
| Difference | 0 | 0 | 0 | 0 | 0 | 0 | | |
| RPD (%) | 0 | 0 | 0 | 0 | 0 | 0 | | |



| Sample ID | | | | Heavy Meta | s | | | |
|------------|---------|---------|----------|------------|------|---------|--------|------|
| | Arsenic | Cadmium | Chromium | Copper | Lead | Mercury | Nickel | Zinc |
| MW02 | <1 | <0.1 | 1 | 3 | <1 | <0.1 | 1 | 9 |
| Dup01 | <1 | <0.1 | <1 | <1 | <1 | <0.1 | <1 | 4 |
| PQL | 4 | 0.5 | 1 | 1 | 1 | 0.1 | 1 | 1 |
| Difference | 0 | 0 | NA | NA | 0 | 0 | NA | 5 |
| RPD (%) | 0 | 0 | NA | NA | 0 | 0 | NA | 76.9 |

Table Q6: Comparative Results of Replicate Groundwater Sample Analysis – Intra-laboratory Results Intra-laboratory

| Sample ID | Total Hydr (| Petroleum ocarbons (TPH) | Monocyclic Aromatic Hydrocarbons (BTEX) | | | | | |
|------------|--------------------|----------------------------------|---|---------|--------------|-----------------|--|--|
| | C6-C9 | C ₁₀ -C ₃₆ | Benzene | Toluene | Ethylbenzene | Total Xylene | | |
| MW02 | <10 | <250 | <1 | <1 | <1 | <2 | | |
| Dup01 | <10 | <250 | <1 | <1 | <1 | <2 | | |
| PQL | 25 | 250 | 0.5 / 0.2 | 0.5 | 1 / 0.5 | 3 / 1 / 0.5 | | |
| Difference | 0 | 0 | 0 | 0 | 0 | 0 | | |
| RPD (%) | 0 | 0 | 0 | 0 | 0 | 0 | | |

The calculated RPD values were mostly within the acceptable range for the samples and their replicates, with the exception of the following:

- MW02/0.5 0.6 and Dup07 (soil) for lead (93%), nickel (40%), zinc (57%);
- BH08/0.5 0.6 and Dup04 (soil) for total PAH (138%); and
- MW02 and Dup01 (water) for zinc (76.9%).

Based on the RPDs it is considered in general the numerical difference in the concentrations is not large and therefore the actual difference is not significant. The variation in numerical differences may also be due to the heterogenous nature of the fill material. It is therefore considered that the results indicate an acceptable consistency between the samples and their replicates, and indicate that suitable field sampling methodology was adopted and laboratory precision was achieved.

For the zinc in groundwater that was over the general acceptance range, the numerical difference in the concentrations is not considered large and therefore the actual difference is not significant, although the RPD is above 50%. It is therefore considered that the results indicate an acceptable consistency between the sample and its replicate and indicates that suitable field sampling methodology was adopted and laboratory precision was achieved.



Q2 - LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

The following QA/QC procedures were conducted by the laboratories.

Reagent Blank

This sample is prepared and analysed at the beginning of every analytical run, following calibration of the analytical apparatus. The laboratory results for reagent blanks for soil and groundwater analyses indicated concentrations of all analytes to be below laboratory detection limits. These results are included in the laboratory reports in Appendix I. The laboratory results for blanks indicated concentrations of all analytes to be below laboratory detection limits and therefore the results were considered to be acceptable.

Spike Recovery

This is a sample replicate prepared by adding a known amount of analyte prior to analysis, and then treated exactly the same as all other samples. The recovery result indicates the proportion of the known concentration of the analyte that is detected during analysis. These results are included in the laboratory reports in Appendix I. The spike recovery rates are compared with limits as specified in Envirolab Services Quality Control System, and any exceedances are highlighted in the reports.

The Envirolab report indicated that the percentage recovery of acid extractable metals in soil was not possible to report due to the high concentration of elements in the sample. However, an acceptable recovery was obtained for the LCS.

All other surrogate recoveries were within the laboratory limits, thereby indicating acceptable analyte recovery rates.

Surrogate Recovery

This sample is prepared by adding a known amount of surrogate, which behaves similarly to the analyte, prior to analysis to each sample. The recovery result indicates the proportion of the known concentration of the surrogate that is detected during analysis. The surrogate recovery rates are compared with limits as specified in Envirolab Services and any exceedances are highlighted in the reports.

All surrogate recoveries were within the laboratory limits, thereby indicating acceptable analyte recovery rates.

Duplicates

These are additional portions of a sample which are analysed in exactly the same manner as all other samples. The duplicate sample results are included in the laboratory results in Appendix I. The laboratory report indicates that the duplicate results were within the laboratory acceptance criteria with the exception of one RPD result for PAH of 67% in report 62422. However, overall the duplicate results were within the acceptance criteria.

In overall terms, therefore, the data quality objectives have been attained and the quality of the investigation data is considered acceptable.

Appendix H

Borehole Logs

Sampling

Sampling is carried out during drilling or test pitting to allow engineering examination (and laboratory testing where required) of the soil or rock.

Disturbed samples taken during drilling provide information on colour, type, inclusions and, depending upon the degree of disturbance, some information on strength and structure.

Undisturbed samples are taken by pushing a thinwalled sample tube into the soil and withdrawing it to obtain a sample of the soil in a relatively undisturbed state. Such samples yield information on structure and strength, and are necessary for laboratory determination of shear strength and compressibility. Undisturbed sampling is generally effective only in cohesive soils.

Test Pits

Test pits are usually excavated with a backhoe or an excavator, allowing close examination of the insitu soil if it is safe to enter into the pit. The depth of excavation is limited to about 3 m for a backhoe and up to 6 m for a large excavator. A potential disadvantage of this investigation method is the larger area of disturbance to the site.

Large Diameter Augers

Boreholes can be drilled using a rotating plate or short spiral auger, generally 300 mm or larger in diameter commonly mounted on a standard piling rig. The cuttings are returned to the surface at intervals (generally not more than 0.5 m) and are disturbed but usually unchanged in moisture content. Identification of soil strata is generally much more reliable than with continuous spiral flight augers, and is usually supplemented by occasional undisturbed tube samples.

Continuous Spiral Flight Augers

The borehole is advanced using 90-115 mm diameter continuous spiral flight augers which are withdrawn at intervals to allow sampling or in-situ testing. This is a relatively economical means of drilling in clays and sands above the water table. Samples are returned to the surface, or may be collected after withdrawal of the auger flights, but they are disturbed and may be mixed with soils from the sides of the hole. Information from the drilling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively low reliability, due to the remoulding, possible mixing or softening of samples by groundwater.

Non-core Rotary Drilling

The borehole is advanced using a rotary bit, with water or drilling mud being pumped down the drill rods and returned up the annulus, carrying the drill cuttings. Only major changes in stratification can be determined from the cuttings, together with some information from the rate of penetration. Where drilling mud is used this can mask the cuttings and reliable identification is only possible from separate sampling such as SPTs.

Continuous Core Drilling

A continuous core sample can be obtained using a diamond tipped core barrel, usually with a 50 mm internal diameter. Provided full core recovery is achieved (which is not always possible in weak rocks and granular soils), this technique provides a very reliable method of investigation.

Standard Penetration Tests

Standard penetration tests (SPT) are used as a means of estimating the density or strength of soils and also of obtaining a relatively undisturbed sample. The test procedure is described in Australian Standard 1289, Methods of Testing Soils for Engineering Purposes - Test 6.3.1.

The test is carried out in a borehole by driving a 50 mm diameter split sample tube under the impact of a 63 kg hammer with a free fall of 760 mm. It is normal for the tube to be driven in three successive 150 mm increments and the 'N' value is taken as the number of blows for the last 300 mm. In dense sands, very hard clays or weak rock, the full 450 mm penetration may not be practicable and the test is discontinued.

The test results are reported in the following form.

 In the case where full penetration is obtained with successive blow counts for each 150 mm of, say, 4, 6 and 7 as:

 In the case where the test is discontinued before the full penetration depth, say after 15 blows for the first 150 mm and 30 blows for the next 40 mm as:

15, 30/40 mm

Sampling Methods

The results of the SPT tests can be related empirically to the engineering properties of the soils.

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

Dynamic penetrometer tests (DCP or PSP) are carried out by driving a steel rod into the ground using a standard weight of hammer falling a specified distance. As the rod penetrates the soil the number of blows required to penetrate each successive 150 mm depth are recorded. Normally there is a depth limitation of 1.2 m, but this may be extended in certain conditions by the use of extension rods. Two types of penetrometer are commonly used.

- Perth sand penetrometer a 16 mm diameter flat ended rod is driven using a 9 kg hammer dropping 600 mm (AS 1289, Test 6.3.3). This test was developed for testing the density of sands and is mainly used in granular soils and filling.
- Cone penetrometer a 16 mm diameter rod with a 20 mm diameter cone end is driven using a 9 kg hammer dropping 510 mm (AS 1289, Test 6.3.2). This test was developed initially for pavement subgrade investigations, and correlations of the test results with California Bearing Ratio have been published by various road authorities.

Symbols & Abbreviations

Introduction

These notes summarise abbreviations commonly used on borehole logs and test pit reports.

Drilling or Excavation Methods

| С | Core Drilling |
|------|--------------------------|
| R | Rotary drilling |
| SFA | Spiral flight augers |
| NMLC | Diamond core - 52 mm dia |
| NQ | Diamond core - 47 mm dia |
| HQ | Diamond core - 63 mm dia |
| PQ | Diamond core - 81 mm dia |

Water

| \triangleright | Water seep |
|---------------------|-------------|
| $\overline{\nabla}$ | Water level |

Sampling and Testing

- Auger sample А
- В Bulk sample
- D Disturbed sample Е
- Environmental sample
- U_{50} Undisturbed tube sample (50mm)
- W Water sample
- pocket penetrometer (kPa) рр
- PID Photo ionisation detector
- PL Point load strength Is(50) MPa
- S Standard Penetration Test V Shear vane (kPa)

Description of Defects in Rock

The abbreviated descriptions of the defects should be in the following order: Depth, Type, Orientation, Coating, Shape, Roughness and Other. Drilling and handling breaks are not usually included on the logs.

Defect Type

| В | Bedding plane |
|-----|-----------------|
| Cs | Clay seam |
| Cv | Cleavage |
| Cz | Crushed zone |
| Ds | Decomposed seam |
| F | Fault |
| J | Joint |
| Lam | lamination |
| Pt | Parting |
| Sz | Sheared Zone |
| V | Vein |

Orientation

The inclination of defects is always measured from the perpendicular to the core axis.

21

- vertical v
- sub-horizontal sh
- sub-vertical sv

Coating or Infilling Term

| cln | clean |
|-----|----------|
| со | coating |
| he | healed |
| inf | infilled |
| stn | stained |
| ti | tight |
| vn | veneer |

Coating Descriptor

| ca | calcite |
|-----|--------------|
| cbs | carbonaceous |
| cly | clay |
| fe | iron oxide |
| mn | manganese |
| slt | silty |
| | |

Shape

| cu | curved |
|----|------------|
| ir | irregular |
| pl | planar |
| st | stepped |
| un | undulating |

Roughness

| ро | polished |
|----|--------------|
| ro | rough |
| sl | slickensided |
| sm | smooth |
| vr | very rough |

Other

| fg | fragmented |
|-----|------------|
| bnd | band |
| qtz | quartz |

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General



Asphalt Road base

Concrete

Filling

Soils



Topsoil

Peat

Clay

Silty clay

Sandy clay

Gravelly clay

Shaly clay

Silt

Clayey silt

Sandy silt

Sand

Clayey sand

Silty sand

Gravel

Sandy gravel

Cobbles, boulders

Talus

Sedimentary Rocks



Limestone

Metamorphic Rocks

Slate, phyllite, schist

Quartzite

Gneiss

Igneous Rocks



Granite

Dolerite, basalt, andesite

Dacite, epidote

Tuff, breccia

Porphyry

SURFACE LEVEL: --EASTING: NORTHING: DIP/AZIMUTH: 90°/--

Sampling & In Situ Testing

BORE No: BH101 **PROJECT No: 72628** DATE: 23/9/2011 SHEET 1 OF 1

CLIENT: Parramatta City Council **PROJECT:** Phase 1 & 2 Contamination Assessment LOCATION: Lennox Bridge Carpark

| | | | Description | ici | Sampling & In Situ Testing | | | | L. | Well | |
|---|---|-------|---|---|----------------------------|-------|-------|--------------|------|-------------|---|
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| | | (11) | Strata | 5 | Typ | Dep | am | Comments | 5 | Details | |
| ł | - | | ROADBASE | h. 0 | | _ | 0 | | | | |
| | | 0.2 | FILLING dark grov aith and filling with readhage grovel | | E | 0.2 | | PID<1 | | | |
| | ł | 0.4 | \Box (20mm-40mm) | \mathbb{K} | | 0.3 | | | | | |
| | ł | 0.5 | FILLING - orange and dark brown, silty sand filling | | _E | 0.6 | | PID<1 | | | |
| | ł | | SILTY SAND, orange brown, silty sand, humid | | | | | | | | |
| | F | - 1 | - becoming more orange with depth | : : : : | E | 1.0 , | DUP08 |] 3 PID<1 | | -1 | |
| | F | | | | | 1.1 | | | | | |
| | F | | | | | | | | | - | |
| | F | | | | | | | | | | |
| | F | | | · · · · | | | | | | - | |
| | F | -2 | | $\left[\cdot \left[\cdot \right] \cdot \right] \cdot$ | | 2.0 | | PID<1 | | -2 | |
| | F | | | | | 2.1 | | | | - | |
| | F | | | | | | | | | - | |
| | F | | | | | | | | | - | |
| | F | | | | | | | | | - | |
| | F | -3 | | | F | 3.0 | | PID<1 | | -3 | |
| | E | 3.1 | Bore discontinued at 3.1m | | | -3.1 | | | | | |
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RIG: Dando Terrier

TYPE OF BORING: Pushtube

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

WATER OBSERVATIONS: No free groundwater observed REMARKS: *DUP08 sample BH101/1.0-1.1m

SAMPLING & IN SITU TESTING LEGEND G Gas sample PID Phot LEGEND PID Photo ionisation detector (ppm) PL(A) Point load axial test Is(50) (MPa) PL(D) Point load diametral test Is(50) (MPa) pp Pocket penetrometer (kPa) S Standard penetration test V Shear vane (kPa) A Auger sample B Bulk sample BLK Block sample C Core drilling D Disturbed sam E Environmental Gas sample Piston sample Tube sample (x mm dia.) Water sample Water seep Water level G P U_x W Core drilling Disturbed sample Environmental sample ₽



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH102 PROJECT No: 72628 DATE: 23/9/2011 SHEET 1 OF 1

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| | - (| m) | Strata | С Ш | Typ | Depi | amp | Comments | ∣≥ | Details | |
| $\left \right $ | - | 0 1 | | <u>i.</u> | | 01 | S S | | | | |
| | Ļ | 0.3 | FILLING - dark grey, silty sand filling with roadbase gravel | \bigotimes | _E | 0.2 | | PID<1 | | - | |
| | Ę | 0.5 | $\langle (5mm-30mm) \rangle$ | \bowtie | E | 0.4 | | PID<1 | | - | |
| | F | | FILLING - light brown, silty sand filling with trace roadbase | $\left[\cdot \right] \cdot \left[\cdot \right] \cdot \left[\cdot \right]$ | | 0.0 | | | | - | |
| | F. | | gravel (5mm-20mm) | $ \cdot \cdot \cdot \cdot $ | | | | | | | |
| | -1 | | SILTY SAND - orange brown, silty sand with trace ash | $\left \cdot \right \cdot \left \cdot \right $ | _E | 1.0 1.1 | | PID<1 | | [| |
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| | F | | | | | | | | | - | |
| | F | | | | | | | | | - | |
| | -3 | 2.4 | | | | 3.0 | | PID<1 | | -3 | |
| | E | 3.1 | Bore discontinued at 3.1m | | | -3.1- | | | | | |
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RIG: Dando Terrier

CLIENT:

PROJECT:

Parramatta City Council

LOCATION: Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A
 Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B
 Bulk sample
 P
 Piston sample
 PL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 U,
 Tube sample (x mm dia.)
 PL(D) Point load diametral test Is(50) (MPa)

 C
 Core drilling
 W
 Water sample
 pp
 Pocket penetrometer (kPa)

 D
 Disturbed sample
 V
 Water seep
 S
 Standard penetration test

 E
 Environmental sample
 ¥
 Water level
 V
 Shear vane (kPa)



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH103 PROJECT No: 72628 DATE: 22/9/2011 SHEET 1 OF 1

| | | | | | DIF | | | n. 90 / | SHEET 1 OF 1 | | |
|---|-------|-----|---|-----------------------|-----|------------|----------|-------------------|--------------|-------------|---|
| | | | Description | <u>.</u> | | Sam | npling a | & In Situ Testing | | Well | |
| 님 | Dep | th | of | aphi -og | e | Ę | ole | Desults 9 | /ater | Constructio | n |
| | (III) | ' | Strata | 5 U | Typ | Dep | Sam | Comments | 5 | Details | |
| F | - | 0.1 | ASPHALT | | F | 0.1 | | PID<1 | | - | |
| | - | 0.3 | \neg FILLING - dark grey, gravelly sand filling with some | \bigotimes | | 0.2 | | | | - | |
| | - | 0.5 | | <u> </u> | _E_ | 0.5 0.6 | | PID<1 | | - | |
| | - | | some gravel and roadbase with trace brick fragments | | | | | | | - | |
| | -1 | | $\sqrt{\text{SILTY SAND}}$ - orange brown, silty sand | ! ! ! • • • • | _E_ | 1.0 1 1 | | PID<1 | | -1 | |
| | - | | ՝ 1.0m: humid | : : : • • • • | | | | | | - | |
| | - | | | $ \cdot \cdot \cdot $ | _E_ | 1.5 | | PID<1 | | - | |
| | - | | | | | 1.0 | | | | - | |
| | -2 | | | [·i·i·i· | E_ | 2.0 | | PID<1 | | -2 | |
| | - | | | <u>-i-i-i</u> - | | 2 | | | | - | |
| | - | | 2.5m: clavey with depth with trace ash | · · · · | | | | | | - | |
| | - | | | | | | | | | - | |
| | -3 | 3.0 | Bore discontinued at 3.0m | · · · · | E | 2.9 | | PID<1 | | - 3 | |
| | - | | | | | | | | | - | |
| | - | | | | | | | | | - | |
| | - | | | | | | | | | - | |
| | -4 | | | | | | | | | -4 | |
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| | -6 | | | | | | | | | -6 | |
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| | -7 | | | | | | | | | -7 | |
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| | - | | | | | | | | | - | |
| | -8 | | | | | | | | | -8 | |
| | - | | | | | | | | | - | |
| | - | | | | | | | | | - - | |
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RIG: Dando Terrier TYPE OF BORING: Pushtube

CLIENT:

PROJECT:

Parramatta City Council

LOCATION: Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B Bulk sample
 P
 Piston sample
 PL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 Ux Tube sample (x mm dia.)
 PL(D) Point load diametral test Is(50) (MPa)

 D Disturbed sample
 W
 Water sample (x mm dia.)
 PL

 D Disturbed sample
 P
 Water seep
 S
 Standard penetration test

 E
 Environmental sample
 ¥
 Water level
 V
 Shear vane (kPa)



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH104 PROJECT No: 72628 DATE: 22/9/2011 SHEET 1 OF 1

DIP/AZIMUTH: 90°/--Sampling & In Situ Testing Description Well Graphic Water Depth Log Ъ of Construction Depth Type Sample Results & Comments (m) Details Strata .О. ROADBASE 02 0.2 0.3 PID<1 $\overline{\mathbf{X}}$ Ē FILLING - dark brown, sandy gravelly filling with some 0.4 \asphalt pieces (10mm-30mm) 0.5 0.6 PID<1 Е *DUP7 SILTY SAND - orange silty sand $\cdot |\cdot| \cdot$ 1.0 1.1 1 1.0 - 1 PID<1 E SILTY SAND - light yellow brown, silty sand $\cdot |\cdot| \cdot |$ (becoming lighter with depth) $\cdot |\cdot| \cdot |$ 1.5 PID<1 E $\cdot |\cdot| \cdot |$ 16 $\cdot |\cdot| \cdot |$ 2 2.0 2.1 -2 PID<1 $\cdot |\cdot| \cdot |$ E $\cdot |\cdot| \cdot |$ $\cdot |\cdot| \cdot |$ • | • | • | 3 3.0 Bore discontinued at 3.0m 4 -4 5 -5 6 -6 7 - 7 8 - 8 9 -9

RIG: Dando Terrier

CLIENT:

PROJECT:

LOCATION:

Parramatta City Council

Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed REMARKS: *DUP07 sample BH104/0.5-0.6m

 SAMPLING & IN SITU TESTING LEGEND

 A
 Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B
 Bulk sample
 P
 Piston sample
 PL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 U,
 Tube sample (x mm dia.)
 PL(D) Point load diametral test Is(50) (MPa)

 C
 Core drilling
 W
 Water sample
 pp
 Pocket penetrometer (kPa)

 D
 Disturbed sample
 V
 Water seep
 S
 Standard penetration test

 E
 Environmental sample
 ¥
 Water level
 V
 Shear vane (kPa)



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH105 PROJECT No: 72628 DATE: 22/9/2011 SHEET 1 OF 1

DIP/AZIMUTH: 90°/--Sampling & In Situ Testing Graphic Description Well Depth Log Water Ъ of Sample Construction Depth Type Results & Comments (m) Details Strata ASPHALT/ROADBASE 02 CONCRETE AA 04 0.4 0.5 Е PID<1 FILLING - dark brown, silty sand filling with some gravel pieces (20mm-40mm) and trace concrete (20mm) 1 1.0 - 1 PID<1 E 1.1 1.2 Ē sample of pottery only 1.2m: some asphalt pieces, trace pottery pieces (100mm) 1.5 PID<1 Ē 16 2.0 2.1 2 -2 PID<1 E 2.2 SILTY SAND - yellow silty sand, humid · | · | · | $\cdot |\cdot| \cdot |$ $\cdot |\cdot| \cdot |$ 3 3.0 3.1 -3 · | · | · | | PID<1 E $\cdot |\cdot| \cdot |$ • | • | • | $\cdot |\cdot| \cdot |$ -4 4.0 Bore discontinued at 4.0m 5 -5 6 -6 7 - 7 8 - 8

RIG: Dando Terrier TYPE OF BORING: Pushtube

- 9

CLIENT:

PROJECT:

LOCATION:

Parramatta City Council

Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

-9

WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A
 Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B
 Bulk sample
 P
 Piston sample
 PL(A) Point load axial test 1s(50) (MPa)

 BLK Block sample
 U
 Tube sample (x mm dia.)
 PL(D) Point load diametral test 1s(50) (MPa)

 C
 Core drilling
 W
 Water sample
 pp

 D
 Disturbed sample
 V
 Water seep
 S

 E
 Environmental sample
 ¥
 Water level
 V



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH106 PROJECT No: 72628 DATE: 22/9/2011 SHEET 1 OF 1

DIP/AZIMUTH: 90°/--Sampling & In Situ Testing Graphic Description Well Log Water Depth Ъ of Construction Type Depth Sample Results & Comments (m) Details Strata .О. ROADBASE 02 0.2 PID<1 Е 0.2 0.3 0.4 FILLING - dark grey, silty sand filling with some roadbase 04 gravel and rocks (20mm-50mm), trace Е PID<1 0.5 0.6 0.7 ash/cinder/sandstone (10mm) 07 Е PID<1 FILLING - light grey, sandy silt filling with some clay 0.8 1.0 FILLING - yellow, sandy silt filling with some clay and 1 1.1 E PID<1 sandstone pieces (10mm-50mm) FILLING - dark brown, silty sand filling $\cdot |\cdot| \cdot |$ SILTY SAND - orange brown, silty sand with trace ash, $\cdot |\cdot| \cdot |$ humid $\cdot |\cdot| \cdot |$ 2 2.0 2.1 -2 PID<1 • | • | • | E $\cdot |\cdot| \cdot |$ $\cdot |\cdot| \cdot |$ · | · | · | 2.9 $\cdot |\cdot| \cdot |$ 3 -3 Е PID<1 ·3.2 3.2 Bore discontinued at 3.2m 4 -4 5 -5 6 -6 7 - 7 8 - 8 9 -9

RIG: Dando Terrier

CLIENT:

PROJECT:

LOCATION:

Parramatta City Council

Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A
 Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B
 Bulk sample
 P
 Piston sample
 PL(A) Point load axial test 1s(50) (MPa)

 BLK Block sample
 U
 Tube sample (x mm dia.)
 PL(D) Point load axial test 1s(50) (MPa)

 C
 Core drilling
 W
 Water sample
 pp
 Pocket penetrometer (kPa)

 D
 Disturbed sample
 P
 Water level
 V
 Shard ard penetration test



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH107 PROJECT No: 72628 DATE: 22/9/2011 SHEET 1 OF 1

| | | | | | | | | n. 907 | | SHEET 1 OF 1 | | |
|--------|--------|-----|--|---------------|----------|----------------------------|-----|---------------|-------|--------------|--|--|
| | | | Description | <u>.</u> | | Sampling & In Situ Testing | | | | Well | | |
| L L | Deptl | ן ר | of | aph. | e | ţ | ple | Poculte & | Vater | Construction | | |
| | (111) | | Strata | _ ق_ | ⊥ ⊐ | Dep | Sam | Comments | > | Details | | |
| T | C | .1 | ~ASPHALT/ROADBASE | | E . | 0.1 | | PID<1 | | - | | |
| | C | .3 | γ FILLING - dark grey, silty sand filling with asphalt gravel | | , ; | 0.2 | | | | - | | |
| | | | FILLING - dark orange brown, silty sand filling with trace | ′ 🔛 | E_ | 0.5 0.6 | | PID<1 | | | | |
| | | ŀ | ash | | E | 0.8 | | PID=31 | | | | |
| Ē | ' 1 | .1 | γ pipe | | | 1.0 | | | | | | |
| | | | - move hole due to refusal | | | 15 | | | | | | |
| | | | SILTY SAND - orange brown, silty sand with trace ash, damp | | E | 1.6 | | PID<1 | | - | | |
| | 2 | | | - · · · | | 20 | | | | -2 | | |
| | - | | | | <u> </u> | 2.1 | | PID<1 | | - | | |
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| | 3 3 | .0 | | | | 2.9 | | PID<1 | | - 3 | | |
| | | | Bore discontinued at 3.0m | | | | | | | - | | |
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RIG: Dando Terrier

CLIENT:

PROJECT:

Parramatta City Council

LOCATION: Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B Bulk sample
 P
 Piston sample
 PL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 Ux
 Tube sample (x mm dia.)
 PL(D) Point load axial test Is(50) (MPa)

 D Disturbed sample
 W
 Water sample (x mm dia.)
 PL(D) Point load axial test Is(50) (MPa)

 D Disturbed sample
 V
 Water sample
 P
 Point coat axial test Is(50) (MPa)

 E
 Environmental sample
 V
 Water sample
 V
 Standard penetration test



SURFACE LEVEL: --EASTING: NORTHING:

BORE No: BH108 **PROJECT No: 72628** DATE: 22/9/2011 SHEET 1 OF 1

Well

Construction

Details

PROJECT: Phase 1 & 2 Contamination Assessment LOCATION: Lennox Bridge Carpark DIP/AZIMUTH: 90°/--Sampling & In Situ Testing Graphic Description Water Depth Log Ъ of Sample Depth Type Results & Comments (m) Strata 0.1 0.2 0.3 0.4 0.1 - ROADBASE/ASPHALT *DUP04 PID<1 E 0.3 ► FILLING - dark grey, gravelly sand filling with asphalt PID<1 E pieces (30mm-80mm) FILLING - orange brown, silty sand filling with trace $\cdot |\cdot| \cdot |$ gravel/asphalt pieces 1.0 1.1 1 $\cdot |\cdot| \cdot |$ - 1 SILTY SAND - orange brown, silty sand Е PID<1 $\cdot |\cdot| \cdot |$ $\cdot |\cdot| \cdot |$ 1.5 PID<1 E 1.6 $\cdot |\cdot| \cdot |$ 2.0 2.1 2 -2 PID<1 Ē $\cdot |\cdot| \cdot$

| | 2.5 | | | | | | | - | |
|--------|------|---|-----|------|----|-------|--------------|--------|--|
| - | 2.6 | SILTY SAND - dark brown, silty sand | | | | | | - | |
| Ę | | SILTY SAND - yellow brown, silty sand | | 2.9 | | PID<1 | | | |
| -3 | 3.0 | Bore discontinued at 3.0m | ╘╘═ | -3.0 | | | | - 3 | |
| E | | | | | | | | E | |
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| RIG: D | and | o Terrier DRILLER: Tightsite | LOG | GED | KS | CASIN | G : U | ncased | |
| TYPE C | OF E | SORING: Pushtube | | | | | | | |

WATER OBSERVATIONS: No free groundwater observed REMARKS: *DUP04 sample BH108/0.1-0.2m

CLIENT:

Parramatta City Council

SAMPLING & IN SITU TESTING LEGEND

 LEGEND

 PID
 Photo ionisation detector (ppm)

 PL(A)
 Point load axial test Is(50) (MPa)

 PL(D)
 Point load diametral test Is(50) (MPa)

 pp
 Pocket penetrometer (kPa)

 S
 Standard penetration test

 V
 Shear vane (kPa)

 Gas sample Piston sample Tube sample (x mm dia.) Water sample Water seep Water level A Auger sample B Bulk sample BLK Block sample G P U_x W Core drilling Disturbed sample Environmental sample CDE ₽



SURFACE LEVEL: --EASTING: NORTHING: BORE No: BH109 PROJECT No: 72628 DATE: 23/9/2011 SHEET 1 OF 1

| | | | | | DIF | | | n. 90 / | | SHEET I OF I | |
|---|---------|------|--|---------------------------|-----|------------|----------|-------------------|-------|--------------|---|
| Γ | | | Description | 2 | | Sam | npling & | & In Situ Testing | | Well | |
| R | De | epth | of | p B | ē | ŧ | ple | Deculto 9 | /ater | Constructio | n |
| | | 11) | Strata | 5 | Typ | Dep | Sam | Comments | 5 | Details | |
| F | - | 0.1 | ROADBASE | . . | - | 0.1 | | | | - | |
| | E | 0.3 | FILLING - dark grey, silty sand filling with roadbase pieces | \bigotimes | E | 0.3 | | PIDST | | - | |
| | F | 0.4 | (20mm-50mm) | ·i·i | _E_ | 0.5 0.6 | | PID<1 | | - | |
| | Ē | | pieces (20-30mm) | ۰ŀŀ | | | | | | - | |
| | -1 | | SILTY SAND - dark orange, silty sand, humid | ·!·! | _E_ | 1.0 1 1 | | PID<1 | | -1 | |
| | Ē | | | ·!·!· | | | | | | | |
| | - | | - becoming lighter and denser with depth | | | | | | | - | |
| | F | | | ·!·!· | | | | | | - | |
| | -2 | | | | E | 2.0 | | PID<1 | | -2 | |
| | F | | | | | 2.1 | | | | - | |
| | E | | | · [·] · | | | | | | | |
| | Ļ | | | : : . . . | | | | | | - | |
| | -3 | 3.0 | Bore discontinued at 3 0m | | _E_ | 2.9 | | PID<1 | | 3 | |
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RIG: Dando Terrier

CLIENT:

PROJECT:

Parramatta City Council

LOCATION: Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed REMARKS:

 SAMPLING & IN SITU TESTING LEGEND

 A Auger sample
 G
 Gas sample
 PID
 Photo ionisation detector (ppm)

 B Bulk sample
 P
 Piston sample
 PL(A) Point load axial test Is(50) (MPa)

 BLK Block sample
 Ux tube sample (x mm dia.)
 PL(D) Point load diametal test Is(50) (MPa)

 D C Core drilling
 W
 Water sample (x mm dia.)
 PL
 PD
 Point coad diametal test Is(50) (MPa)

 D Disturbed sample
 V
 Water sample
 S
 Standard penetration test

 E
 Environmental sample
 ¥
 Water level
 V
 Shear vane (kPa)



SURFACE LEVEL: --EASTING: NORTHING:

BORE No: BH110 **PROJECT No: 72628** DATE: 23/9/2011

DIP/AZIMUTH: 90°/--SHEET 1 OF 1 Sampling & In Situ Testing Description Well Graphic Log Water Depth Ъ Construction of Type Depth Sample Results & Comments (m) Details Strata CONCRETE 02 0.3 0.4 FILLING - dark grey brown, silty sandy gravel filling with E some asphalt pieces (10mm-30mm), trace brick (30mm) 0.5 0.6 Е and cinder 0.8 FILLING - clayey sand filling with trace ironstone, 1 1.0 1 sandstone pieces (20mm), ash and cinder Е 1.1 1.2 FILLING - light yellow, silty sand filling 1.6m: ash, cinder burnout with shell fragments 1.7 1.7 E FILLING - pink silty sand filling with shale pieces 18 (10mm-30mm) -2 2.0 -2 1.9m: burnt out area - ash, cinder with hardened (heat 2.2 affected) orange clay SILTY CLAY - brown, silty clay with trace rootlets, ash, 2.5 F 26 hardened orange clay 1.1. SANDSTONE - yellow sandstone 3 3 SILTY SAND - brown silty sand, damp 3.1 F 3.2 2.7m: saturated 3.2 Bore discontinued at 3.2m 4 -4 5 -5 6 -6 7 - 7

RIG: Dando Terrier

8

9

DRILLER: Tightsite

LOGGED: KS

CASING: Uncased

- 8

-9

TYPE OF BORING: Pushtube WATER OBSERVATIONS: No free groundwater observed **REMARKS:**

SAMPLING & IN SITU TESTING LEGEND Gas sample Piston sample Tube sample (x mm dia.) A Auger sample B Bulk sample BLK Block sample G P U W PID Photo ionisation detector (ppm) PL(A) Point load axial test Is(50) (MPa) PL(D) Point load diametral test Is(50) (MPa) Water sample Water seep Water level Core drilling Disturbed sample Environmental sample Pocket penetrometer (kPa) Standard penetration test Shear vane (kPa) CDF pp S V ₽



PROJECT:

LOCATION:

CLIENT: Parramatta City Council Phase 1 & 2 Contamination Assessment Lennox Bridge Carpark

SURFACE LEVEL: 6.641 AHD EASTING: NORTHING:

BORE No: MW01 PROJECT No: 72628 DATE: 19/9/2011

| | | | | DIF | '/AZI | MUTH | H: 90°/ | | SHEET 1 OF 1 | |
|-----|--------------|--|--------------|----------|------------|----------|-----------------------|------|---|--|
| | | Description | <u>io</u> | | San | npling 8 | & In Situ Testing | _ | Well | |
| RL | Depth (m) | of Strata | Graph Log | Type | Depth | Sample | Results & Comments | Wate | Constructior Details | ı |
| | 0. | ASPHALT/CONCRETE | \sim | Е | 0.1 | | PID<1 | | Concrete | |
| | 0.4 | FILLING - grey, silt filling with some gravel and concrete fragments (20mm-30mm) FILLING - dark brown, sand filling with some concrete pieces (30mm-50mm) trace light grey sand brick | | E | 0.5 0.6 | | PID<1 | | Backfill - | |
| | -1 -1 | concrete (100mm-200mm) and ash | \bigotimes | E | 1.0 1.2 | *DUP01 | PID<1 | | ·1 | |
| Ē | . 1.0 | FILLING - orange, silty sand filling, humid | \times | _E_ | 1.5 | | PID<1 | | Bentonite - | -88 |
| | -2 | FILLING - orange, silty sand filling with some peat and trace cinder, damp | \bigotimes | _E | 2.0 2.1 | | PID<1 | | -2 | 2000000 2000000 |
| -4 | -3 | 5 SAND - dark brown, medium grained sand with trace sandstone pieces (400mm) and trace ash (possible filling) | ××> | _E_ | 2.5 2.6 | | PID<1 | | Backfilled with | 000000 |
| 3 | 3.2 | SANDY CLAY - olive green, sandy clay | | <u> </u> | 3.1 | | PID<1 | | | 0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0, |
| 2 | -4 | - moist at 4.0m | | | 4.0 4.1 | | PID<1 | | 4 Machine slotted — PVC screen | 00000000000000000000000000000000000000 |
| | | · · · · · · · · · · · · · · · · · · · | ././. | | | | | | | |
| 3 | -5 5.1 | Bore discontinued at 5.0m | | | | | | | <u>5</u> End cap - -6 -7 -8 -9 | |
| RIC | G: Sco | ut DRILLER: Ground Test | | LOC | GED | : KS | CASING | :Un | cased | |

TYPE OF BORING: Solid flight auger WATER OBSERVATIONS: Moist at 4.0m REMARKS: *DUP01 sample MW01/1.0-1.2m

SAMPLING & IN SITU TESTING LEGEND
 LEGEND

 PID
 Photo ionisation detector (ppm)

 PL(A)
 Point load axial test Is(50) (MPa)

 PL(D)
 Point load diametral test Is(50) (MPa)

 pp
 Pocket penetrometer (kPa)

 S
 Standard penetration test

 V
 Shear vane (kPa)
 A Auger sample B Bulk sample BLK Block sample C Core drilling D Disturbed sam E Environmental LING & IN SITU TESTING G Gas sample P Piston sample U, Tube sample (x mm dia.) W Water sample P Water seep ¥ Water level Core drilling Disturbed sample Environmental sample

Douglas Partners Geotechnics | Environment | Groundwater

CLIENT: PROJECT:

Phase 1 & 2 Contamination Assessment LOCATION: Lennox Bridge Carpark

Parramatta City Council

SURFACE LEVEL: 8.504 AHD EASTING: NORTHING:

BORE No: MW02 **PROJECT No: 72628** DATE: 19/9/2011

Douglas Partners Geotechnics | Environment | Groundwater

| | | | | DIF | 7/AZI | MUTH | 1: 90°/ | ; | SHEET 1 OF 1 | |
|----------|--------------|--|--|----------|------------|----------|-----------------|-------|---------------------------------|----------------------------------|
| \prod | | Description | ic | | San | npling & | In Situ Testing | _ | Well | |
| R | Depth (m) | of | raph Log | be | pth | nple | Results & | Wate | Constructio | n |
| | | Strata | U | Ty | _0.0_ | San | Comments | | Details | |
| <u>}</u> | 0.1 0.2 | GRASS & SANDY TOPSOIL | KX. | _E_ | 0.1 | | PID<1 | | Gatic Cover Concrete | |
| Ē | | FILLING - brown and orange, silty sand filling with trace gravel (concrete, roadbase) (200mm-500mm) | | | 0.5 | | | Ē | | |
| Ē | | SILTY SAND - orange silty sand | ·!·!·!· | _E_ | 0.5 | *DUP02 | PID<1 | | | |
| ŧŧ | .1 | | | | | | | | -1 | |
| <u> </u> | | | | | | | | | | |
| | | | • • • • | | 15 | | | | Pookfill | |
| <u> </u> | | 1.5m: humid | : : : : - - - - | E | 1.6 | | PID<1 | | Dackin | |
| | 2 | | | | 2.0 | | | | -2 | |
| ŧŧ | | | [·[·[·]· | <u>E</u> | 2.1 | | FID~1 | | | |
| -0- | | | | | 2.5 | | PID<1 | | | |
| ĒĒ | | | • • • • : : : : | <u> </u> | 2.6 | | | | | |
| ļ | -3 | | | F | 3.0 | | PID<1 | | -3 | |
| | | | : : : : • • • • | | 3.1 | | | | Bentonite - | -99 |
| -0- | 3.5 | SILTY SAND - light grey silty sand with some clay | | | | | | | | 20 |
| <u>}</u> | 3.7 | SILTY SAND - yellow silty sand | | | | | | | Backfilled with - | 2001 |
| | 4 | | ! ! ! ! • • • • | E | 4.0 | | PID<1 | | gravel 4 | 20°C |
| ŧŧ | | | $\left \cdot \right \cdot \left \cdot \right \cdot$ | | 7.1 | | | | | |
| -4 | 4.5 | SILTY SAND - orange silty sand | | | | | | | | |
| ĒĒ | | | | | | | | | | |
| <u> </u> | 5 | 5.0m: damp | $\left \cdot \right \cdot \left \cdot \right \cdot \left \cdot \right $ | _E_ | 5.0 5.1 | | PID<1 | | -5 | 00 00 00 00 00 00 |
| | | | l-i-i-i- | | | | | | | |
| | | | [·i·i·i | | | | | | Machine slotted – PVC screen | |
| <u> </u> | | | | | | | | | | 001 |
| ĒĒ | - 6 | | • • • • : : : : | | | | | | -6 | 010 |
| <u>}</u> | | | | | | | | | | |
| | | | ! ! ! ! • • • • | | | | | | | |
| ĒĒ | 7 70 | | $ \cdot \cdot \cdot \cdot$ | | | | | | - End cap - | |
| } | 1 1.0 | Bore discontinued at 7.0m | | | | | | | | |
| [[| | | | | | | | | | |
| ŧŧ | | | | | | | | | | |
| | 8 | | | | | | | | 8 | |
| ĒĒ | | | | | | | | | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| ĘĘ | 9 | | | | | | | | 9 | |
| ļ | | | | | | | | | | |
| Ę | | | | | | | | | | |
| Ę | | | | | | | | | | |
| | | | | | | | | | | |
| RIC | Scou | It DRILLER: Ground Test | | LOC | GGED | : KS | CASIN | G: Un | cased | |

TYPE OF BORING: Solid flight auger WATER OBSERVATIONS: Damp at 5.0m

CLIENT:

PROJECT:

LOCATION:

Parramatta City Council

Lennox Bridge Carpark

Phase 1 & 2 Contamination Assessment



SURFACE LEVEL: 8.828 AHD EASTING: NORTHING:

BORE No: MW03 **PROJECT No: 72628** DATE: 20/9/2011

| | | | | | DIF | 7/AZI | MUT | H: 90°/ | | SHEET 1 OF 1 |
|-------|-----------|-----------|---|---|----------------------------|------------|--------|-----------------------|-------|---|
| | | | Description | .ic | Sampling & In Situ Testing | | _ | Well | | |
| RL | Dep (m | oth 1) | of Strata | Graph Log | Type | SJepth | Sample | Results & Comments | Wate | Construction Details |
| F | - | 0.1 | ROADBASE | i N | E_ | 0.1 | | PID<1 | | Gatic Cover |
| Ē | - | 0.2 | FILLING - dark grey, sandy clay filling with some roadbase | \bigotimes | X | | | | | |
| Ē | - | 0.5 | FILLING - red brown, silty sand filling with trace roadbase | | E | 0.5 0.6 | | PID<1 | | |
| -00 | -1 1 | | SILTY SAND - red brown, silty sand, humid | | | 1.0 1.1 | DUP03 | PID<1 | | -1 Backfill |
| | - | | | · · · · · · · · · | E | 1.5 1.6 | | PID<1 | | |
| - | -2 | | | | _E_ | 2.0 2.1 | | PID<1 | | -2 |
| 9 | - | 2.8 | | | | | | | | Bentonite |
| - | -3 | | SILTY SAND - brown yellow, silty sand | $ \begin{array}{c} \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\ \cdot \\$ | | 3.0 3.1 | | PID<1 | | Backfilled with C C C C C C C C C C C C C C C C C C C |
| - 2- | -4 | | 3.8m: moist | | | 4.0 4.1 | | PID<1 | | -4 |
| - + | -5 | | 5.0m: wet | | E | 5.0 5.1 | | PID<1 | | PVC screen |
| | - | | | |] | | | | | |
| -1 -1 | | 6.0 | Bore discontinued at 6.0m | <u> . . . </u> | | | | | | 6 End cap |
| RI | G: S | cou | t DRILLER: Ground Test | | LOC | GGED | : KS | CASING | G: Un | ncased |

TYPE OF BORING: Solid flight auger WATER OBSERVATIONS: Wet at 5.0m REMARKS: *DUP03 sample MW03/1.0-1.1m

A Auger sample B Bulk sample BLK Block sample C Core drilling D Disturbed sam E Environmental

Core drilling Disturbed sample Environmental sample



CLIENT: PROJECT: LOCATION:

Parramatta City Council Phase 1 & 2 Contamination Assessment Lennox Bridge Carpark
Rock Descriptions

Rock Strength

Rock strength is defined by the Point Load Strength Index $(Is_{(50)})$ and refers to the strength of the rock substance and not the strength of the overall rock mass, which may be considerably weaker due to defects. The test procedure is described by Australian Standard 4133.4.1 - 1993. The terms used to describe rock strength are as follows:

| Term | Abbreviation | Point Load Index Is ₍₅₀₎ MPa | Approx Unconfined Compressive Strength MPa* | | |
|----------------|--------------|--|--|--|--|
| Extremely low | EL | <0.03 | <0.6 | | |
| Very low | VL | 0.03 - 0.1 | 0.6 - 2 | | |
| Low | L | 0.1 - 0.3 | 2 - 6 | | |
| Medium | М | 0.3 - 1.0 | 6 - 20 | | |
| High | Н | 1 - 3 | 20 - 60 | | |
| Very high | VH | 3 - 10 | 60 - 200 | | |
| Extremely high | EH | >10 | >200 | | |

* Assumes a ratio of 20:1 for UCS to Is₍₅₀₎

Degree of Weathering

The degree of weathering of rock is classified as follows:

| Term | Abbreviation | Description | | | | | |
|----------------------|--------------|---|--|--|--|--|--|
| Extremely weathered | EW | Rock substance has soil properties, i.e. it can be remoulde and classified as a soil but the texture of the original rock still evident. | | | | | |
| Highly weathered | HW | Limonite staining or bleaching affects whole of roc substance and other signs of decomposition are eviden Porosity and strength may be altered as a result of iro leaching or deposition. Colour and strength of original fres rock is not recognisable | | | | | |
| Moderately weathered | MW | Staining and discolouration of rock substance has taken place | | | | | |
| Slightly weathered | SW | Rock substance is slightly discoloured but shows little or n change of strength from fresh rock | | | | | |
| Fresh stained | Fs | Rock substance unaffected by weathering but staining visible along defects | | | | | |
| Fresh | Fr | No signs of decomposition or staining | | | | | |

Degree of Fracturing

The following classification applies to the spacing of natural fractures in diamond drill cores. It includes bedding plane partings, joints and other defects, but excludes drilling breaks.

| Term | Description |
|--------------------|--|
| Fragmented | Fragments of <20 mm |
| Highly Fractured | Core lengths of 20-40 mm with some fragments |
| Fractured | Core lengths of 40-200 mm with some shorter and longer sections |
| Slightly Fractured | Core lengths of 200-1000 mm with some shorter and loner sections |
| Unbroken | Core lengths mostly > 1000 mm |

Rock Descriptions

Rock Quality Designation

The quality of the cored rock can be measured using the Rock Quality Designation (RQD) index, defined as:

where 'sound' rock is assessed to be rock of low strength or better. The RQD applies only to natural fractures. If the core is broken by drilling or handling (i.e. drilling breaks) then the broken pieces are fitted back together and are not included in the calculation of RQD.

Stratification Spacing

For sedimentary rocks the following terms may be used to describe the spacing of bedding partings:

| Term | Separation of Stratification Planes | | |
|---------------------|-------------------------------------|--|--|
| Thinly laminated | < 6 mm | | |
| Laminated | 6 mm to 20 mm | | |
| Very thinly bedded | 20 mm to 60 mm | | |
| Thinly bedded | 60 mm to 0.2 m | | |
| Medium bedded | 0.2 m to 0.6 m | | |
| Thickly bedded | 0.6 m to 2 m | | |
| Very thickly bedded | > 2 m | | |

Soil Descriptions

Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

| Туре | Particle size (mm) | | | |
|---------|--------------------|--|--|--|
| Boulder | >200 | | | |
| Cobble | 63 - 200 | | | |
| Gravel | 2.36 - 63 | | | |
| Sand | 0.075 - 2.36 | | | |
| Silt | 0.002 - 0.075 | | | |
| Clay | <0.002 | | | |

The sand and gravel sizes can be further subdivided as follows:

| Туре | Particle size (mm) |
|---------------|--------------------|
| Coarse gravel | 20 - 63 |
| Medium gravel | 6 - 20 |
| Fine gravel | 2.36 - 6 |
| Coarse sand | 0.6 - 2.36 |
| Medium sand | 0.2 - 0.6 |
| Fine sand | 0.075 - 0.2 |

The proportions of secondary constituents of soils are described as:

| Term | Proportion | Example |
|-----------------|------------|------------------------------|
| And | Specify | Clay (60%) and Sand (40%) |
| Adjective | 20 - 35% | Sandy Clay |
| Slightly | 12 - 20% | Slightly Sandy Clay |
| With some | 5 - 12% | Clay with some sand |
| With a trace of | 0 - 5% | Clay with a trace of sand |

Definitions of grading terms used are:

- Well graded a good representation of all particle sizes
- Poorly graded an excess or deficiency of particular sizes within the specified range
- Uniformly graded an excess of a particular particle size
- Gap graded a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

| Description | Abbreviation | Undrained shear strength (kPa) |
|-------------|--------------|--------------------------------------|
| Very soft | VS | <12 |
| Soft | S | 12 - 25 |
| Firm | f | 25 - 50 |
| Stiff | st | 50 - 100 |
| Very stiff | vst | 100 - 200 |
| Hard | h | >200 |

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

| Relative Density | Abbreviation | SPT N value | CPT qc value (MPa) |
|---------------------|--------------|----------------|--------------------------|
| Very loose | vl | <4 | <2 |
| Loose | | 4 - 10 | 2 -5 |
| Medium dense | md | 10 - 30 | 5 - 15 |
| Dense | d | 30 - 50 | 15 - 25 |
| Very dense | vd | >50 | >25 |

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil derived from in-situ weathering of the underlying rock;
- Transported soils formed somewhere else and transported by nature to the site; or
- Filling moved by man.

Transported soils may be further subdivided into:

- Alluvium river deposits
- Lacustrine lake deposits
- Aeolian wind deposits
- Littoral beach deposits
- Estuarine tidal river deposits
- Talus scree or coarse colluvium
- Slopewash or Colluvium transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Appendix I

Laboratory Results and Chain-of Custody



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

CERTIFICATE OF ANALYSIS

62420

72628.00, Parramatta

/

26/09/2011

61 Soils

21/09/2011

Client: Douglas Partners 96 Hermitage Rd West Ryde NSW 2114

Attention: Kate Sargent

Sample log in details:

Your Reference: No. of samples: Date samples received / completed instructions received

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: 4/10/11 4/10/11 1 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. Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta/Hurst Laboratory Manager

Alano Nancy Zhang

Chemist

Rhian Morgan Reporting Supervisor

Sarlamis Inorganics Supervisor

Paul Ching

Approved Signatory



Envirolab Reference: **Revision No:**

62420 R 00

Client Reference: 72628.00, Parramatta

| Our Reference: | LINITS | 62420-1 | 62420-35 | 62420-53 |
|---------------------------|--------|--------------|--------------|--------------|
| Your Reference | | BH01/0 2-0 3 | BH07/0 8-1 0 | BH10/1 7-1 8 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil |
| Date extracted | _ | 28/09/2011 | 28/00/2011 | 28/00/2011 |
| | | 20/09/2011 | 20/09/2011 | 20/09/2011 |
| Dichlorodifluoromothana | ma/ka | -1 | 23/03/2011 | -1 |
| Chloromothana | mg/kg | <1 | <1 | <1 |
| | mg/kg | <1 | <1 | <1 |
| Vinyi Chionde | mg/kg | <1 <1 | | <1 |
| Bromometriane | mg/kg | <1 | <1 | <1 |
| Chloroethane | mg/kg | <1 | <1 | <1 |
| Irichlorofluoromethane | mg/kg | <1 | <1 | <1 |
| 1,1-Dichloroethene | mg/kg | <1 | <1 | <1 |
| trans-1,2-dichloroethene | mg/kg | <1 | <1 | <1 |
| 1,1-dichloroethane | mg/kg | <1 | <1 | <1 |
| cis-1,2-dichloroethene | mg/kg | <1 | <1 | <1 |
| bromochloromethane | mg/kg | <1 | <1 | <1 |
| chloroform | mg/kg | <1 | <1 | <1 |
| 2,2-dichloropropane | mg/kg | <1 | <1 | <1 |
| 1,2-dichloroethane | mg/kg | <1 | <1 | <1 |
| 1,1,1-trichloroethane | mg/kg | <1 | <1 | <1 |
| 1,1-dichloropropene | mg/kg | <1 | <1 | <1 |
| Cyclohexane | mg/kg | <1 | <1 | <1 |
| carbon tetrachloride | mg/kg | <1 | <1 | <1 |
| Benzene | mg/kg | <0.2 | <0.2 | <0.2 |
| dibromomethane | mg/kg | <1 | <1 | <1 |
| 1,2-dichloropropane | mg/kg | <1 | <1 | <1 |
| trichloroethene | mg/kg | <1 | <1 | <1 |
| bromodichloromethane | mg/kg | <1 | <1 | <1 |
| trans-1,3-dichloropropene | mg/kg | <1 | <1 | <1 |
| cis-1,3-dichloropropene | mg/kg | <1 | <1 | <1 |
| 1,1,2-trichloroethane | mg/kg | <1 | <1 | <1 |
| Toluene | mg/kg | <0.5 | <0.5 | <0.5 |
| 1,3-dichloropropane | mg/kg | <1 | <1 | <1 |
| dibromochloromethane | mg/kg | <1 | <1 | <1 |
| 1,2-dibromoethane | mg/kg | <1 | <1 | <1 |
| tetrachloroethene | mg/kg | <1 | <1 | <1 |
| 1,1,1,2-tetrachloroethane | mg/kg | <1 | <1 | <1 |
| chlorobenzene | mg/kg | <1 | <1 | <1 |
| Ethylbenzene | mg/kg | <1 | <1 | <1 |
| bromoform | mg/ka | <1 | <1 | <1 |
| m+p-xvlene | ma/ka | <2 | <2 | <2 |
| styrene | ma/ka | <1 | <1 | <1 |
| 1.1.2.2-tetrachloroethane | ma/ka | <1 | <1 | <1 |
| o-Xvlene | ma/ka | <1 | <1 | <1 |
| 1.2.3-trichloropropane | ma/ka | <1 | <1 | <1 |
| , , | | | | |

| VOCs in soil | | | | |
|--------------------------------|-------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-35 | 62420-53 |
| Your Reference | | BH01/0.2-0.3 | BH07/0.8-1.0 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil |
| isopropylbenzene | mg/kg | <1 | <1 | <1 |
| bromobenzene | mg/kg | <1 | <1 | <1 |
| n-propyl benzene | mg/kg | <1 | <1 | <1 |
| 2-chlorotoluene | mg/kg | <1 | <1 | <1 |
| 4-chlorotoluene | mg/kg | <1 | <1 | <1 |
| 1,3,5-trimethyl benzene | mg/kg | <1 | <1 | <1 |
| tert-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,2,4-trimethyl benzene | mg/kg | <1 | <1 | <1 |
| 1,3-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| sec-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,4-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| 4-isopropyl toluene | mg/kg | <1 | <1 | <1 |
| 1,2-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| n-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,2-dibromo-3-chloropropane | mg/kg | <1 | <1 | <1 |
| 1,2,4-trichlorobenzene | mg/kg | <1 | <1 | <1 |
| hexachlorobutadiene | mg/kg | <1 | <1 | <1 |
| 1,2,3-trichlorobenzene | mg/kg | <1 | <1 | <1 |
| Surrogate Dibromofluorometha | % | 99 | 99 | 99 |
| Surrogate aaa-Trifluorotoluene | % | 132 | 114 | 108 |
| Surrogate Toluene-da | % | 104 | 106 | 104 |
| Surrogate 4-Bromofluorobenzene | % | 100 | 101 | 100 |

| vTRH & BTEX in Soil | | | | | | |
|--------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-3 | 62420-7 | 62420-8 | 62420-12 |
| Your Reference | | BH01/0.2-0.3 | BH01/1.0-1.1 | BH02/0.4-0.5 | BH02/1.0-1.1 | BH03/0.5-0.6 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| vTRHC6 - C9 | 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 |
| Surrogate aaa-Trifluorotoluene | % | 132 | 120 | 109 | 128 | 132 |

| vTRH & BTEX in Soil | | | | | | |
|--------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-19 | 62420-22 | 62420-27 | 62420-35 | 62420-39 |
| Your Reference | | BH04/1.0-1.1 | BH05/0.4-0.5 | BH06/0.2-0.3 | BH07/0.8-1.0 | BH08/0.1-0.2 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| vTRHC6 - C9 | 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 |
| Surrogate aaa-Trifluorotoluene | % | 124 | 124 | 112 | 114 | 123 |

| vTRH & BTEX in Soil | | | | | | |
|--------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-46 | 62420-47 | 62420-51 | 62420-52 | 62420-53 |
| Your Reference | | BH09/0.5-0.6 | BH09/1.0-1.1 | BH10/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| vTRHC6 - C9 | 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 |
| Surrogate aaa-Trifluorotoluene | % | 120 | 125 | 124 | 128 | 108 |

Client Reference: 72628.00, Parramatta

| vTRH&BTEX in Soil | | | | | | |
|--------------------------------|-------|------------|------------|------------|------------|------------|
| Our Reference: | UNITS | 62420-57 | 62420-58 | 62420-59 | 62420-60 | 62420-61 |
| Your Reference | | Dup08 | TB1 | TS1 | TB2 | TS2 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| vTRHC6 - C9 | mg/kg | <25 | <25 | [NA] | <25 | [NA] |
| Benzene | mg/kg | <0.2 | <0.2 | 104% | <0.2 | 105% |
| Toluene | mg/kg | <0.5 | <0.5 | 104% | <0.5 | 105% |
| Ethylbenzene | mg/kg | <1 | <1 | 107% | <1 | 102% |
| m+p-xylene | mg/kg | <2 | <2 | 107% | <2 | 102% |
| o-Xylene | mg/kg | <1 | <1 | 107% | <1 | 102% |
| Surrogate aaa-Trifluorotoluene | % | 114 | 111 | 106 | 126 | 105 |

| sTRH in Soil (C10-C36) | | | | | | |
|------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-3 | 62420-7 | 62420-8 | 62420-12 |
| Your Reference | | BH01/0.2-0.3 | BH01/1.0-1.1 | BH02/0.4-0.5 | BH02/1.0-1.1 | BH03/0.5-0.6 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| TRHC10 - C14 | mg/kg | <50 | <50 | <50 | <50 | <50 |
| TRHC 15 - C28 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| TRHC29 - C36 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| Surrogate o-Terphenyl | % | 94 | 130 | 137 | 138 | 136 |
| | | | | | | |

| sTRH in Soil (C10-C36) | | | | | | |
|------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-19 | 62420-22 | 62420-27 | 62420-35 | 62420-39 |
| Your Reference | | BH04/1.0-1.1 | BH05/0.4-0.5 | BH06/0.2-0.3 | BH07/0.8-1.0 | BH08/0.1-0.2 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| TRHC10 - C14 | mg/kg | <50 | <50 | <50 | <50 | <50 |
| TRHC 15 - C28 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| TRHC29 - C36 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| Surrogate o-Terphenyl | % | 138 | 99 | 78 | 73 | 72 |

| sTRH in Soil (C10-C36) | | | | | | |
|------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-46 | 62420-47 | 62420-51 | 62420-52 | 62420-53 |
| Your Reference | | BH09/0.5-0.6 | BH09/1.0-1.1 | BH10/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| TRHC 10 - C 14 | mg/kg | <50 | <50 | <50 | <50 | <50 |
| TRHC 15 - C28 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| TRHC29 - C36 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| Surrogate o-Terphenyl | % | 70 | 82 | 82 | 85 | 88 |

| sTRH in Soil (C10-C36) | | |
|------------------------|-------|------------|
| Our Reference: | UNITS | 62420-57 |
| Your Reference | | Dup08 |
| Date Sampled | | 23/09/2011 |
| Type of sample | | Soil |
| Date extracted | - | 28/09/2011 |
| Date analysed | - | 28/09/2011 |
| TRHC 10 - C 14 | mg/kg | <50 |
| TRHC 15 - C28 | mg/kg | <100 |
| TRHC 29 - C36 | mg/kg | <100 |
| Surrogate o-Terphenyl | % | 88 |

72628.00, Parramatta

| PAHs in Soil | | | | | | |
|---------------------------|-------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Our Reference: | UNITS | 62420-1 | 62420-3 | 62420-7 | 62420-8 | 62420-12 |
| Your Reference | | BH01/0.2-0.3 | BH01/1.0-1.1 | BH02/0.4-0.5 | BH02/1.0-1.1 | BH03/0.5-0.6 |
| DateSampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 22/09/2011 |
| I ype of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| 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 | 0.2 | <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+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 |
| Surrogate p-Terphenyl-d14 | % | 96 | 95 | 98 | 97 | 97 |
| | 1 | 1 | 1 | | | |
| PAHs in Soil | | 0040040 | 00,400,000 | 00400.07 | 00400.05 | 00,400,00 |
| Our Reference: | UNITS | 62420-19 PH04/1 0 1 1 | 62420-22 PH05/0 4 0 5 | 62420-27 PHOG/0.2.0.2 | 62420-35 PH07/0 9 1 0 | 62420-39 PH08/0 1 0 2 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Naphthalene | ma/ka | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | ma/ka | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthene | ma/ka | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluorene | ma/ka | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Phenanthrene | mg/kg | <0.1 | 0.3 | <0.1 | 0.2 | 0.2 |

| Envirolab Reference: | 62420 |
|----------------------|-------|
| Revision No: | R 00 |

Anthracene

Fluoranthene

Pyrene

Benzo(a)anthracene

Chrysene

Benzo(b+k)fluoranthene

Benzo(a)pyrene

Indeno(1,2,3-c,d)pyrene

Dibenzo(a,h)anthracene

Benzo(g,h,i)perylene

Surrogate p-Terphenyl-d14

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

%

<0.1

<0.1

<0.1

<0.1

<0.1

<0.2

<0.05

<0.1

<0.1

<0.1

96

<0.1

0.7

0.7

0.5

0.4

0.8

0.54

0.3

<0.1

0.3

116

<0.1

0.1

0.1

<0.1

<0.1

<0.2

0.11

<0.1

<0.1

<0.1

97

<0.1

0.4

0.4

0.2

0.2

0.3

0.23

0.1

<0.1

0.1

95

<0.1

<0.1

<0.1

<0.1

<0.1

<0.2

<0.05

<0.1

<0.1

<0.1

94

| PAHs in Soil | | | | | | |
|---------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-46 | 62420-47 | 62420-51 | 62420-52 | 62420-53 |
| Your Reference | | BH09/0.5-0.6 | BH09/1.0-1.1 | BH10/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| 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 | 0.3 | <0.1 | <0.1 |
| Anthracene | mg/kg | <0.1 | <0.1 | 0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | <0.1 | <0.1 | 0.5 | <0.1 | <0.1 |
| Pyrene | mg/kg | <0.1 | <0.1 | 0.6 | <0.1 | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 | <0.1 | 0.3 | <0.1 | <0.1 |
| Chrysene | mg/kg | <0.1 | <0.1 | 0.2 | <0.1 | <0.1 |
| Benzo(b+k)fluoranthene | mg/kg | <0.2 | <0.2 | 0.4 | <0.2 | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 | <0.05 | 0.27 | <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 |
| Surrogate p-Terphenyl-d14 | % | 98 | 97 | 95 | 97 | 96 |

| PAHs in Soil | | |
|---------------------------|-------|------------|
| Our Reference: | UNITS | 62420-57 |
| Your Reference | | Dup08 |
| Date Sampled | | 23/09/2011 |
| Type of sample | | Soil |
| Date extracted | - | 28/09/2011 |
| Date analysed | - | 28/09/2011 |
| Naphthalene | mg/kg | <0.1 |
| Acenaphthylene | mg/kg | <0.1 |
| Acenaphthene | mg/kg | <0.1 |
| Fluorene | mg/kg | <0.1 |
| Phenanthrene | mg/kg | <0.1 |
| Anthracene | mg/kg | <0.1 |
| Fluoranthene | mg/kg | <0.1 |
| Pyrene | mg/kg | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 |
| Chrysene | mg/kg | <0.1 |
| Benzo(b+k)fluoranthene | mg/kg | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 |
| Surrogate p-Terphenyl-d14 | % | 93 |

| Organochlorine Pesticides in soil | | | | | | |
|-----------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-7 | 62420-12 | 62420-22 | 62420-27 |
| Your Reference | | BH01/0.2-0.3 | BH02/0.4-0.5 | BH03/0.5-0.6 | BH05/0.4-0.5 | BH06/0.2-0.3 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| 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 TCLMX | % | 93 | 95 | 93 | 108 | 91 |

| Organochlorine Pesticides in soil | | | | | | |
|-----------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-35 | 62420-39 | 62420-46 | 62420-52 | 62420-53 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.1-0.2 | BH09/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| 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 TCLMX | % | 93 | 94 | 95 | 95 | 95 |

| Organophosphorus Pesticides | | | | | | |
|-----------------------------|----------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Our Reference: | UNITS | 62420-1 | 62420-7 | 62420-12 | 62420-22 | 62420-27 |
| Your Reference | | BH01/0.2-0.3 | BH02/0.4-0.5 | BH03/0.5-0.6 | BH05/0.4-0.5 | BH06/0.2-0.3 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Diazinon | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dimethoate | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos-methyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ronnel | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fenitrothion | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromophos-ethyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethion | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogate TCLMX | % | 93 | 95 | 93 | 108 | 91 |
| | | | 1 | | | |
| Organophosphorus Pesticides | | | | | | |
| Our Reference: | UNITS | 62420-35 | 62420-39 | 62420-46 | 62420-52 | 62420-53 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.1-0.2 | BH09/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 22/09/2011 Soil | 22/09/2011 Soil | 23/09/2011 Soil | 23/09/2011 Soil | 23/09/2011 Soil |
| | | 301 | 301 | 301 | 301 | 301 |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Diazinon | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Dimethoate | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos-methyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Ronnel | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fenitrothion | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| renitiothon | | | | | | 1 |
| Bromophos-ethyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromophos-ethyl Ethion | mg/kg mg/kg | <0.1 <0.1 | <0.1 <0.1 | <0.1 <0.1 | <0.1 <0.1 | <0.1 <0.1 |

Client Reference: 72628.00, I

72628.00, Parramatta

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

95

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

95

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

95

| PCBs in Soil | | | | | | |
|-----------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-7 | 62420-12 | 62420-22 | 62420-27 |
| Your Reference | | BH01/0.2-0.3 | BH02/0.4-0.5 | BH03/0.5-0.6 | BH05/0.4-0.5 | BH06/0.2-0.3 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Arochlor 1016 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1221* | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1232 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1242 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1248 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1254 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1260 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogate TCLMX | % | 93 | 95 | 93 | 108 | 91 |
| | | | | | | |
| PCBs in Soil | | | | | | |
| Our Reference: | UNITS | 62420-35 | 62420-39 | 62420-46 | 62420-52 | 62420-53 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.1-0.2 | BH09/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

93

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

<0.1

94

Arochlor 1016

Arochlor 1221*

Arochlor 1232

Arochlor 1242

Arochlor 1248

Arochlor 1254

Arochlor 1260

Surrogate TCLMX

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

mg/kg

%

Client Reference: 72628.

| Total Phenolics in Soil | | | | | | |
|-----------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-7 | 62420-12 | 62420-22 | 62420-27 |
| Your Reference | | BH01/0.2-0.3 | BH02/0.4-0.5 | BH03/0.5-0.6 | BH05/0.4-0.5 | BH06/0.2-0.3 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Date analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Total Phenolics (as Phenol) | mg/kg | <5 | <5 | <5 | <5 | <5 |
| | | | | | | |
| Total Phenolics in Soil | | | | | | |
| Our Reference: | UNITS | 62420-35 | 62420-39 | 62420-46 | 62420-52 | 62420-53 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.1-0.2 | BH09/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Date analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Total Phenolics (as Phenol) | mg/kg | <5 | <5 | <5 | <5 | <5 |

| Acid Extractable metals in soil | | | | | | |
|---------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-3 | 62420-7 | 62420-8 | 62420-12 |
| Your Reference | | BH01/0.2-0.3 | BH01/1.0-1.1 | BH02/0.4-0.5 | BH02/1.0-1.1 | BH03/0.5-0.6 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Arsenic | mg/kg | <4 | <4 | <4 | <4 | <4 |
| Cadmium | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | mg/kg | 150 | 8 | 4 | 5 | 4 |
| Copper | mg/kg | 34 | 6 | 3 | 3 | 8 |
| Lead | mg/kg | 6 | 9 | 7 | 5 | 39 |
| Mercury | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 | 0.1 |
| Nickel | mg/kg | 120 | 4 | 2 | 2 | 3 |
| Zinc | mg/kg | 63 | 12 | 7 | 7 | 12 |
| | | | | | | |
| Acid Extractable metals in soil | | | | | | |

| Acid Extractable metals in soil | | | | | | |
|---------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-19 | 62420-22 | 62420-27 | 62420-35 | 62420-39 |
| Your Reference | | BH04/1.0-1.1 | BH05/0.4-0.5 | BH06/0.2-0.3 | BH07/0.8-1.0 | BH08/0.1-0.2 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Arsenic | mg/kg | <4 | 10 | 5 | 6 | <4 |
| Cadmium | mg/kg | <0.5 | 1.9 | 0.5 | 4.0 | <0.5 |
| Chromium | mg/kg | 1 | 16 | 12 | 26 | 140 |
| Copper | mg/kg | 2 | 58 | 34 | 1,500 | 32 |
| Lead | mg/kg | 2 | 630 | 510 | 220 | 6 |
| Mercury | mg/kg | <0.1 | 2.3 | 0.4 | 0.2 | <0.1 |
| Nickel | mg/kg | <1 | 9 | 6 | 92 | 120 |
| Zinc | mg/kg | 4 | 1,300 | 220 | 460 | 62 |

| Acid Extractable metals in soil | | | | | | |
|---------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-46 | 62420-47 | 62420-51 | 62420-52 | 62420-53 |
| Your Reference | | BH09/0.5-0.6 | BH09/1.0-1.1 | BH10/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Arsenic | mg/kg | <4 | <4 | <4 | <4 | 4 |
| Cadmium | mg/kg | <0.5 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | mg/kg | 5 | 3 | 13 | 6 | 14 |
| Copper | mg/kg | 4 | 2 | 7 | <1 | 14 |
| Lead | mg/kg | 7 | 4 | 62 | 4 | 20 |
| Mercury | mg/kg | <0.1 | <0.1 | 0.2 | <0.1 | <0.1 |
| Nickel | mg/kg | 3 | 2 | 2 | 1 | 3 |
| Zinc | mg/kg | 7 | 5 | 31 | 1 | 10 |

| Acid Extractable metals in soil | | |
|---------------------------------|-------|------------|
| Our Reference: | UNITS | 62420-57 |
| Your Reference | | Dup08 |
| Date Sampled | | 23/09/2011 |
| Type of sample | | Soil |
| Date digested | - | 28/09/2011 |
| Date analysed | - | 28/09/2011 |
| Arsenic | mg/kg | <4 |
| Cadmium | mg/kg | <0.5 |
| Chromium | mg/kg | 8 |
| Copper | mg/kg | 6 |
| Lead | mg/kg | 9 |
| Mercury | mg/kg | <0.1 |
| Nickel | mg/kg | 4 |
| Zinc | mg/kg | 11 |

| Moisture | | | | | | |
|-------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-1 | 62420-3 | 62420-7 | 62420-8 | 62420-12 |
| Your Reference | | BH01/0.2-0.3 | BH01/1.0-1.1 | BH02/0.4-0.5 | BH02/1.0-1.1 | BH03/0.5-0.6 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Moisture | % | 7.6 | 9.7 | 6.2 | 6.7 | 7.6 |
| | | | | | | |
| Moisture | | | | | | |
| Our Reference: | UNITS | 62420-19 | 62420-22 | 62420-27 | 62420-35 | 62420-39 |
| Your Reference | | BH04/1.0-1.1 | BH05/0.4-0.5 | BH06/0.2-0.3 | BH07/0.8-1.0 | BH08/0.1-0.2 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Moisture | % | 3.8 | 11 | 13 | 11 | 6.8 |
| | | 1 | | 1 | | |
| Moisture | | | | | | |
| Our Reference: | UNITS | 62420-46 | 62420-47 | 62420-51 | 62420-52 | 62420-53 |
| Your Reference | | BH09/0.5-0.6 | BH09/1.0-1.1 | BH10/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Moisture | % | 6.6 | 4.8 | 8.2 | 7.6 | 16 |
| | | | | | | |
| Moisture | | | | | | |
| Our Reference: | UNITS | 62420-57 | 62420-58 | 62420-60 | | |
| Your Reference | | Dup08 | TB1 | TB2 | | |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 23/09/2011 | | |
| Type of sample | | Soil | Soil | Soil | | |
| Date prepared | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 1 | |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | | |
| Moisture | % | 9.0 | 3.8 | 4.5 | | |
| | | | | | T | |

| Asbestos ID - soils Our Reference: Your Reference Date Sampled Type of sample | UNITS | 62420-1 BH01/0.2-0.3 23/09/2011 Soil | 62420-7 BH02/0.4-0.5 23/09/2011 Soil | 62420-12 BH03/0.5-0.6 22/09/2011 Soil | 62420-22 BH05/0.4-0.5 22/09/2011 Soil | 62420-27 BH06/0.2-0.3 23/09/2011 Soil |
|---|-------|---|--|--|--|--|
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Sample mass tested | g | Approx 40g | Approx 40g | Approx 40g | Approx 40g | Approx 40g |
| Sample Description | - | Dark grey coarse- grained soil & rocks | Red-brown fine- grained soil | Brown fine- grained soil | Brown coarse- grained soil | Brown coarse- grained soil |
| Asbestos ID in soil | - | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg |
| Trace Analysis | - | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected |
| Ashastas ID - soils | | | | | | |
| Our Reference: | UNITS | 62420-35 | 62420-39 | 62420-46 | 62420-52 | 62420-53 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.1-0.2 | BH09/0.5-0.6 | BH10/1.0-1.1 | BH10/1.7-1.8 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date analysed | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Sample mass tested | g | 27.62g | Approx 40g | Approx 40g | Approx 40g | Approx 40g |
| Sample Description | - | Beige coarse- grained soil & fragments | Dark grey coarse- grained soil & rocks | Red-brown coarse- grained soil | Beige coarse- grained soil | Red-brown clayey soil |
| Asbestos ID in soil | - | Chrysotile asbestos detected Amosite asbestos detected | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg |
| Trace Analysis | - | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected |

| Miscellaneous Inorg - soil | | | | | | |
|------------------------------|----------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-2 | 62420-13 | 62420-20 | 62420-22 | 62420-30 |
| Your Reference | | BH01/0.5-0.6 | BH03/1.0-1.1 | BH04/1.5-1.6 | BH05/0.4-0.5 | BH06/1.1-1.2 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Date analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| pH 1:5 soil:water | pH Units | 8.2 | 8.2 | 7.4 | 8.0 | 7.7 |
| Chloride, Cl 1:5 soil:water | mg/kg | 17 | 3 | [NA] | 6 | [NA] |
| Sulphate, SO4 1:5 soil:water | mg/kg | 23 | 22 | [NA] | 17 | [NA] |

| Miscellaneous Inorg - soil | | | | | | |
|---|------------------------|----------------------------|---------------------------|-------------------------|---------------------------|---------------------------|
| Our Reference: | UNITS | 62420-35 | 62420-40 | 62420-43 | 62420-47 | 62420-51 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.3-0.4 | BH08/2.0-2.1 | BH09/1.0-1.1 | BH10/0.5-0.6 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Data avenavad | | 20/00/2011 | 20/00/2011 | 20/00/2011 | 20/00/2011 | 20/00/2011 |
| Late prepared | _ | | | | | |
| Batepieparea | - | 30/03/2011 | 30/03/2011 | 30/03/2011 | 30/03/2011 | 30/03/2011 |
| Date analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Date analysed pH 1:5 soil:water | - pHUnits | 30/09/2011 10.6 | 30/09/2011 6.9 | 30/09/2011 4.7 | 30/09/2011 7.9 | 30/09/2011 6.9 |
| Date analysed pH 1:5 soil:water Chloride, Cl 1:5 soil:water | - pH Units mg/kg | 30/09/2011 10.6 [NA] | 30/09/2011 6.9 [NA] | 30/09/2011 4.7 16 | 30/09/2011 7.9 [NA] | 30/09/2011 6.9 [NA] |

| Miscellaneous Inorg - soil | | |
|------------------------------|---------|--------------|
| Our Reference: | UNITS | 62420-53 |
| Your Reference | | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 |
| Type of sample | | Soil |
| | | |
| Date prepared | - | 30/09/2011 |
| Date analysed | - | 30/09/2011 |
| pH 1:5 soil:water | pHUnits | 7.3 |
| Chloride, Cl 1:5 soil:water | mg/kg | 13 |
| Sulphate, SO4 1:5 soil:water | mg/kg | 71 |

| ESP/CEC | | | | |
|--------------------------|----------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-2 | 62420-22 | 62420-43 |
| Your Reference | | BH01/0.5-0.6 | BH05/0.4-0.5 | BH08/2.0-2.1 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 22/09/2011 |
| Type of sample | | Soil | Soil | Soil |
| Exchangeable Ca | meq/100g | 2.5 | 22 | 0.40 |
| ExchangeableK | meq/100g | 0.13 | 0.19 | 0.042 |
| ExchangeableMg | meq/100g | 0.13 | 0.36 | 0.49 |
| ExchangeableNa | meq/100g | 0.087 | 0.033 | 0.012 |
| Cation Exchange Capacity | meq/100g | 2.9 | 22 | <1.0 |
| ESP | % | 3.0 | <1.0 | 1.3 |

Client Reference: 72628.00, Parramatta

| Texture and Salinity | | | | | | |
|--|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62420-2 | 62420-13 | 62420-20 | 62420-22 | 62420-30 |
| Your Reference | | BH01/0.5-0.6 | BH03/1.0-1.1 | BH04/1.5-1.6 | BH05/0.4-0.5 | BH06/1.1-1.2 |
| Date Sampled | | 23/09/2011 | 22/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Electrical Conductivity 1:5 soil:water | µS/cm | 86 | 49 | 30 | 100 | 48 |
| Texture Value | | 9.0 | 9.0 | [NA] | [NA] | 14 |
| Texture | - | CLAY LOAM | CLAY LOAM | [NA] | [NA] | SANDY |
| | | | | | | LOAM |
| ECe | dS/m | 1.0 | 0 | [NA] | [NA] | 1.0 |
| Class | - | NONSALINE | NONSALINE | [NA] | [NA] | NONSALINE |

| Texture and Salinity | | | | | | |
|--|-------|--------------|--------------|--------------------|--------------|--------------|
| Our Reference: | UNITS | 62420-35 | 62420-40 | 62420-43 | 62420-47 | 62420-51 |
| Your Reference | | BH07/0.8-1.0 | BH08/0.3-0.4 | BH08/2.0-2.1 | BH09/1.0-1.1 | BH10/0.5-0.6 |
| Date Sampled | | 22/09/2011 | 22/09/2011 | 22/09/2011 | 23/09/2011 | 23/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Electrical Conductivity 1:5 soil:water | µS/cm | 460 | 340 | 190 | 42 | 180 |
| Texture Value | | [NA] | [NA] | 14 | [NA] | [NA] |
| Texture | - | [NA] | [NA] | SANDY LOAM | [NA] | [NA] |
| ECe | dS/m | [NA] | [NA] | 3.0 | [NA] | [NA] |
| Class | - | [NA] | [NA] | SLIGHTLY SALINE | [NA] | [NA] |

| Texture and Salinity | | |
|--|-------|-------------------------|
| Our Reference: | UNITS | 62420-53 |
| Your Reference | | BH10/1.7-1.8 |
| Date Sampled | | 23/09/2011 |
| Type of sample | | Soil |
| Electrical Conductivity 1:5 soil:water | µS/cm | 130 |
| Texture Value | | 8.0 |
| Texture | - | LIGHT MEDIUM CLAY |
| ECe | dS/m | 1.0 |
| Class | - | NONSALINE |

Client Reference: 72628.00, Parramatta

| MethodID | Methodology Summary |
|------------------------|--|
| Org-014 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. |
| Org-016 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. |
| Org-003 | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. |
| Org-012 subset | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. |
| Org-005 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. |
| Org-008 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. |
| Org-006 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. |
| Inorg-030 | Total Phenolics - determined colorimetrically following disitillation, based upon APHA 21st ED 5530 D. |
| Metals-020 ICP- AES | Determination of various metals by ICP-AES. |
| Metals-021 CV- AAS | Determination of Mercury by Cold Vapour AAS. |
| Inorg-008 | Moisture content determined by heating at 105 deg C for a minimum of 4 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. |
| Inorg-001 | pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+. |
| Inorg-081 | Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 21st ED, 4110 -B. |
| Metals-009 | Determination of exchangeable cations and cation exchange capacity in soil based on Rayment and Lyons 2011. |
| Inorg-002 | Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA 21st ED 2510 and Rayment & Higginson. |

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| CLUALITYCON IRQL. UMIS PAL MEHOD Bank Duplicate insuits Spike Smit Spike Smit | | | | | | | | | |
|--|-------------------------------|-------|-----|---------|----------------|---------------|----------------------------|-----------|---------------------|
| VOCs in soil | QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Date extracted - 28/09/2 62420-1 28/09/2011 LCS-1 28/09/2011 Date analysed - 28/09/2 62420-1 28/09/2011 LCS-1 29/09/2011 Dichlorodifluoromethane mg/kg 1 Org-014 62420-1 <1 <1 | VOCs in soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date analysed - 2909/2011 C62420-1 2909/2011 LCS-1 2909/2011 Dichorodifluoranothane mg/kg 1 Org-014 62420-1 <1 <1 | Date extracted | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| | Date analysed | - | | | 29/09/2 011 | 62420-1 | 29/09/2011 29/09/2011 | LCS-1 | 29/09/2011 |
| | Dichlorodifluoromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Chloromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| Bromomethane mg/kg 1 Org-014 | Vinyl Chloride | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| | Bromomethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Chloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,1-Dichloroethene mgkg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] 1,1-dichloroethene mgkg 1 Org-014 <1 | Trichlorofluoromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 1,1-Dichloroethene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,1-dichloroethane mgkg 1 $Org-014$ 62420-1 | trans-1,2-dichloroethene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| cis-1,2-dichloroethene mgkg 1 $Org-014$ <1 $62420-1$ $<1 <1$ $[NR]$ $[NR]$ bromochloromethane mgkg 1 $Org-014$ <1 | 1,1-dichloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 116% |
| bromochloromethane mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] chloroform mg/kg 1 Org-014 <1 | cis-1,2-dichloroethene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| chloroform mg/kg 1 Org-014 62420-1 | bromochloromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $\begin{array}{c c c c c c c c c c c c c c c c c c c $ | chloroform | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 108% |
| 1,2-dichloroethane mg/kg 1 $Org-014$ <1 $62420-1$ $<1 <1$ LCS-1 99% 1,1,1-trichloroethane mg/kg 1 $Org-014$ <1 | 2,2-dichloropropane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,1,1-trichloroethane mg/kg 1 $Org-014$ <1 $62420-1$ $<1 <1$ $LCS-1$ 101% 1,1-dichloropropene mg/kg 1 $Org-014$ <1 | 1,2-dichloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 99% |
| 1,1-dichloropropenemg/kg1 $Org-014$ <1 $62420-1$ $<1 <1$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $()$ $($ | 1,1,1-trichloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 101% |
| Cyclohexane mg/kg 1 Org-014 <1 62420-1 <1 <1 INR] INR] carbon tetrachloride mg/kg 1 Org-014 <1 | 1,1-dichloropropene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Cyclohexane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| Benzene mg/kg 0.2 Org-014 <0.2 62420-1 <0.2 <0.2 [NR] [NR] dibromomethane mg/kg 1 Org-014 <1 | carbon tetrachloride | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| dibromomethane mg/kg 1 Org-014 62420-1 | Benzene | mg/kg | 0.2 | Org-014 | <0.2 | 62420-1 | <0.2 <0.2 | [NR] | [NR] |
| 1,2-dichloropropane mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] trichloroethene mg/kg 1 Org-014 <1 | dibromomethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | 1,2-dichloropropane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| bromodichloromethane mg/kg 1 Org-014 <1 62420-1 <1 <1 LCS-1 110% trans-1,3- mg/kg 1 Org-014 <1 | trichloroethene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 100% |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | bromodichloromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 110% |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | trans-1,3- dichloropropene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | cis-1,3-dichloropropene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| Toluenemg/kg0.5Org-014<0.5 $62420-1$ <0.5 <0.5[NR][NR]1,3-dichloropropanemg/kg1Org-014<1 | 1,1,2-trichloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{c ccccccccccccccccccccccccccccccccccc$ | Toluene | mg/kg | 0.5 | Org-014 | <0.5 | 62420-1 | <0.5 <0.5 | [NR] | [NR] |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | 1,3-dichloropropane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | dibromochloromethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 110% |
| tetrachloroethene mg/kg 1 Org-014 <1 62420-1 <1 <1 LCS-1 104% 1,1,1,2- mg/kg 1 Org-014 <1 | 1,2-dibromoethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,1,1,2- tetrachloroethane mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] chlorobenzene mg/kg 1 Org-014 <1 | tetrachloroethene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | LCS-1 | 104% |
| chlorobenzene mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] Ethylbenzene mg/kg 1 Org-014 <1 | 1,1,1,2- tetrachloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| Ethylbenzene mg/kg 1 Org-014 <1 62420-1 <1 <1 INR] INR] | chlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| | Ethylbenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| bromoform mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] | bromoform | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| m+p-xylene mg/kg 2 Org-014 <2 62420-1 <2 <2 [NR] [NR] | m+p-xylene | mg/kg | 2 | Org-014 | ~2 | 62420-1 | <2 <2 | [NR] | [NR] |
| styrene mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] | styrene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,1,2,2- mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] [NR] tetrachloroethane [NR] [NR] | 1,1,2,2- tetrachloroethane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| o-Xylene mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] | o-Xylene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2,3-trichloropropane mg/kg 1 Org-014 <1 62420-1 <1 <1 [NR] | 1,2,3-trichloropropane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |

Envirolab Reference: Revision No:

62420 R 00

| Client Reference: | |
|-------------------|--|
|-------------------|--|

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|---|-------|-----|---------|-------|---------------|----------------------------|-----------|---------------------|
| VOCs in soil | | | | | | Base II Duplicate II % RPD | | |
| isopropylbenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| bromobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| n-propyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 2-chlorotoluene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 4-chlorotoluene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,3,5-trimethyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| tert-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2,4-trimethyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,3-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| sec-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,4-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 4-isopropyl toluene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| n-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2-dibromo-3- chloropropane | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2,4-trichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| hexachlorobutadiene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| 1,2,3-trichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62420-1 | <1 <1 | [NR] | [NR] |
| <i>Surrogate</i> Dibromofluorometha | % | | Org-014 | 100 | 62420-1 | 99 98 RPD: 1 | LCS-1 | 102% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | | Org-014 | 125 | 62420-1 | 132 134 RPD:2 | LCS-1 | 121% |
| Surrogate Toluene-d8 | % | | Org-014 | 105 | 62420-1 | 104 105 RPD:1 | LCS-1 | 103% |
| Surrogate 4- Bromofluorobenzene | % | | Org-014 | 101 | 62420-1 | 100 100 RPD: 0 | LCS-1 | 101% |

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| UTH # BTEX in Sold Image: strate in the strate | QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|--|---|--|--|---|---|---|---|---|--|
| Date extracted - 28/09/2 62420-1 28/09/2011 LCS-1 28/09/2011 Date analysed - 011 20082 62420-1 28/08/2011 LCS-1 28/08/2011 VTRHCs-Cy mg/kg 0.5 Org-016 -0.2 62420-1 -0.2 -0.2 LCS-1 88/02 Toluene mg/kg 0.5 Org-016 -0.5 62420-1 -0.2 -2 LCS-1 93% Entybornearu mg/kg 1 Org-016 -0.5 62420-1 -2 -2 LCS-1 10% ox-tytion mg/kg 1 Org-016 -2 62420-1 -2 -2 LCS-1 10% Sympatre ana- mg/kg 1 Org-016 125 62420-1 -28/08/2011 LCS-1 120% CUALTYCONTROL UNITS POL METHOD Bark Duplicate results Spike 5% Recovery TRHC ~ C-4 mg/kg 50 Org-003 -00 62420-1 -28/09/2011 LCS-1 | vTRH & BTEX in Soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date analysed - 20092 011 62420-1 011 28092011 28092011 LCS-1 29092011 VTRHCs-Ca mgkg 0.2 Org-016 -d.2 62420-1 -d.25 -d.25 LCS-1 99% Benzene mgkg 0.2 Org-016 -d.2 62420-1 -d.21 -d.2 LCS-1 99% Ethythenzene mgkg 1 Org-016 -d 62420-1 -d.21 -d.2 LCS-1 99% ox-lytene mgkg 2 Org-016 -d 62420-1 -d.21 -d.2 LCS-1 99% ox-lytene mgkg 1 Org-016 -d 62420-1 -d.11 -d.1 LCS-1 96% Symogate aaa- "M Org-016 125 62420-1 -d.20092011 LCS-1 28/96.2% QUALTYCONTROL UNITS POL METHOD Bank Duplicate results Splex % Recovery TRHC n - C+ mgkg 50 Org-003 -d00 62420-1 -d001 -00 LCS-1 <t< td=""><td>Date extracted</td><td>-</td><td></td><td></td><td>28/09/2 011</td><td>62420-1</td><td>28/09/2011 28/09/2011</td><td>LCS-1</td><td>28/09/2011</td></t<> | Date extracted | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| $\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$ | Date analysed | - | | | 29/09/2 011 | 62420-1 | 29/09/2011 29/09/2011 | LCS-1 | 29/09/2011 |
| Benzene Tollene mgkg mgkg 0.2 Org-016 <0.2 62420-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6220-1 <0.5 6200-2011 LCS-1 2809-2011 Date extracted - - - 2809-201 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2011 2809-2 | vTRHC6 - C9 | mg/kg | 25 | Org-016 | <25 | 62420-1 | <25 <25 | LCS-1 | 93% |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Benzene | mg/kg | 0.2 | Org-016 | <0.2 | 62420-1 | <0.2 <0.2 | LCS-1 | 89% |
| $ \begin{array}{ c c c c c c c c c c c c c c c c c c c$ | Toluene | mg/kg | 0.5 | Org-016 | <0.5 | 62420-1 | <0.5 <0.5 | LCS-1 | 106% |
| msp-sylene o-Xylene mg/kg mg/kg 2 Org-016 -2 62420-1 (125 -22 1-2 (2420-1) LCS-1 (11 -1) PM/L LCS-1 P1% 95% Surgegie aaa- Tithucoroluene % DQL METHOD Bank Duplicate Smit Duplicate results Spike Smit | Ethylbenzene | mg/kg | 1 | Org-016 | <1 | 62420-1 | <1 <1 | LCS-1 | 90% |
| o-Xylene mgkg 1 Org-016 | m+p-xylene | mg/kg | 2 | Org-016 | 2 | 62420-1 | <2 <2 | LCS-1 | 91% |
| Surrogate aaa- Trifluorotoluene % Org-016 125 62420-1 132 134 RPD:2 LCS-1 120% QUALITYCONTROL QUALITYCONTROL UMITS POL METHOD Bank Duplicate results Spike Smit | o-Xylene | mg/kg | 1 | Org-016 | <1 | 62420-1 | <1 <1 | LCS-1 | 95% |
| | <i>Surrogate</i> aaa- Trifluorotoluene | % | | Org-016 | 125 | 62420-1 | 132 134 RPD:2 | LCS-1 | 120% |
| sTRH in Soli (C10-C36) Image: constraint of the constraint of | QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Date extracted - 2809/2012 62420-1 2809/2011 2809/2011 LCS-1 2809/2011 Date analysed - - 2809/2011 62420-1 2809/2011 2809/2011 LCS-1 2809/2011 TRH Cn - Cia mg/kg 50 Org-003 <50 | sTRH in Soil (C10-C36) | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date analysed - - 2809/2 011 62420-1 011 2809/2011 [28/09/2011] [28/09/2011] LGS-1 2809/2011 TRHC n - C14 mgkg 100 Org-003 50 62420-1 <50 [50] | Date extracted | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | Date analysed | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | TRHC 10 - C14 | mg/kg | 50 | Org-003 | <50 | 62420-1 | <50 <50 | LCS-1 | 97% |
| $\begin{array}{ c c c c c c c c c c c c c c c c c c c$ | TRHC 15 - C28 | mg/kg | 100 | Org-003 | <100 | 62420-1 | <100 <100 | LCS-1 | 97% |
| Surrogate o-Terphenyl % Org-003 90 62420-1 94 118 RPD:23 LCS-1 91% QUALITY CONTROL UNITS PQL METHOD Blank Duplicate Sm# Duplicate results Spike Sm# Recovery PAHs in Soil - - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Date extracted - - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Naphthalene mg/kg 0.1 Org-012 subset <0.1 | TRHC29 - C36 | mg/kg | 100 | Org-003 | <100 | 62420-1 | <100 <100 | LCS-1 | 95% |
| QUALITY CONTROL UNITS POL METHOD Blank Duplicate Sm# Duplicate results Spike Sm# Spike % Recovery PAHs in Soil - - - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Date extracted - - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Naphthalene mg/kg 0.1 Org-012 subset <0.1 | Surrogate o-Terphenyl | % | | Org-003 | 90 | 62420-1 | 94 118 RPD:23 | LCS-1 | 91% |
| PAHs in Soil recovery Base II Duplicate II%RPD Recovery Date extracted - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Date analysed - 28/09/2 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Naphthalene mg/kg 0.1 Org-012 <0.1 | | | | | | | | | |
| Date extracted - 28/09/2 011 62420-1 28/09/2 011 28/09/2011 28/09/2011 LCS-1 28/09/2011 Date analysed - 28/09/2 011 62420-1 28/09/2011 28/09/2011 LCS-1 28/09/2011 Naphthalene mg/kg 0.1 Org-012 subset <0.1 | QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Date analysed28/09/2 28/09/262420-1 62420-128/09/2011 28/09/2011LCS-128/09/2011Naphthalenemg/kg0.1Org-012 subset<0.1 | QUALITY CONTROL PAHs in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
| Naphthalenemg/kg0.1 $Org-012$ subset<0.1 $62420-1$ $<0.1 < 0.1$ $LCS-1$ 94%Acenaphthylenemg/kg0.1 $Org-012$ subset<0.1 | QUALITY CONTROL PAHs in Soil Date extracted | UNITS | PQL | METHOD | Blank 28/09/2 | Duplicate Sm# | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 | Spike Sm# | Spike % Recovery 28/09/2011 |
| Acenaphthylene mg/kg 0.1 Org-012 subset <0.1 62420-1 <0.1 <0.1 [NR] [NR] Acenaphthene mg/kg 0.1 Org-012 subset <0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed | UNITS - - | PQL | | Blank 28/09/2 011 28/09/2 | Duplicate Sm# 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 | Spike Sm# LCS-1 LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 |
| Acenaphthenemg/kg0.1Org-012 subset<0.1 $62420 \cdot 1$ <0.1 $ <0.1$ [NR][NR]Fluorenemg/kg0.1Org-012 subset<0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene | UNITS - - mg/kg | PQL 0.1 | METHOD Org-012 | Blank 28/09/2 011 28/09/2 011 | Duplicate Sm# 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 94% |
| Fluorene mg/kg 0.1 Org-012 subset <0.1 62420-1 <0.1 <0.1 LCS-1 100% Phenanthrene mg/kg 0.1 Org-012 subset <0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene | UNITS - mg/kg mg/kg | PQL 0.1 0.1 | METHOD Org-012 subset Org-012 | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 LCS-1 [NR] | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] |
| Phenanthrenemg/kg0.1Org-012 subset<0.1 $62420-1$ $0.2 0.2 RPD:0$ LCS-198%Anthracenemg/kg0.1Org-012 subset<0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene | UNITS - mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 LCS-1 [NR] [NR] | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] [NR] |
| Anthracenemg/kg0.1Org-012 subset<0.1 $62420 \cdot 1$ <0.1 <0.1[NR][NR]Fluoranthenemg/kg0.1Org-012 subset<0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene | UNITS - mg/kg mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II % RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] [NR] 100% |
| Fluoranthene mg/kg 0.1 Org-012 subset <0.1 62420-1 <0.1 <0.1 LCS-1 98% Pyrene mg/kg 0.1 Org-012 subset <0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene | UNITS - mg/kg mg/kg mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II % RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.2 0.2 RPD: 0 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] [NR] 100% 98% |
| Pyrene mg/kg 0.1 Org-012 subset <0.1 62420-1 <0.1 <0.1 LCS-1 103% Benzo(a)anthracene mg/kg 0.1 Org-012 subset <0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene | UNITS - mg/kg mg/kg mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.2 0.2 RPD: 0 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 LCS-1 [NR] | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] [NR] 100% 98% [NR] |
| Benzo(a)anthracene mg/kg 0.1 Org-012 subset <0.1 62420-1 <0.1 <0.1 [NR] [NR] Chrysene mg/kg 0.1 Org-012 subset <0.1 | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II %RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.2 0.2 RPD: 0 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 LCS-1 [NR] LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] 100% 98% [NR] 98% |
| Chrysene mg/kg 0.1 Org-012 <0.1 62420-1 <0.1 <0.1 LCS-1 104% | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II%RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <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 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 [NR] LCS-1 [NR] LCS-1 LCS-1 | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] 100% 98% [NR] 98% 103% |
| | QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 28/09/2 011 28/09/2 011 <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 <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 <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 <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 <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 <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 <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 | Duplicate Sm# 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 62420-1 | Duplicate results Base II Duplicate II%RPD 28/09/2011 28/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.2 0.2 RPD: 0 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-1 LCS-1 [NR] [NR] LCS-1 [NR] LCS-1 [NR] LCS-1 [NR] | Spike % Recovery 28/09/2011 28/09/2011 94% [NR] 100% 98% [NR] 98% 103% [NR] |

Envirolab Reference: 62420 Revision No: R 00

| Client Reference: 72628.00, Parramatta | | | | | | | | |
|--|-------|------|-------------------|-----------------------|---------------|----------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| PAHs in Soil | | | | | | Base II Duplicate II % RPD | | |
| Benzo(b+k)fluoranthene | mg/kg | 0.2 | Org-012 subset | <0.2 | 62420-1 | <0.2 <0.2 | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-012 subset | <0.05 | 62420-1 | <0.05 <0.05 | LCS-1 | 101% |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate p-Terphenyl- d14 | % | | Org-012 subset | 97 | 62420-1 | 96 96 RPD:0 | LCS-1 | 94% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Organochlorine Pesticides in soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date extracted | - | | | 28/09/2 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| Date analysed | - | | | 011 29/09/2 011 | 62420-1 | 29/09/2011 29/09/2011 | LCS-1 | 29/09/2011 |
| HCB | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| alpha-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 82% |
| gamma-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| beta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 96% |
| Heptachlor | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 68% |
| delta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Aldrin | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 73% |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 78% |
| gamma-Chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| alpha-chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Endosulfan I | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| pp-DDE | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 95% |
| Dieldrin | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 77% |
| Endrin | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 69% |
| pp-DDD | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 107% |
| Endosulfan II | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| pp-DDT | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Endrin Aldehyde | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 75% |
| Methoxychlor | mg/kg | 0.1 | Org-005 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate TCLMX | % | | Org-005 | 97 | 62420-1 | 93 93 RPD:0 | LCS-1 | 93% |

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|---------------------------------|-------|-----|-----------------------|----------------|----------------|----------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Organophosphorus Pesticides | | | | | | Base II Duplicate II %RPD | | |
| Date extracted | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| Date analysed | - | | | 29/09/2 011 | 62420-1 | 29/09/2011 29/09/2011 | LCS-1 | 29/09/2011 |
| Diazinon | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Dimethoate | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Chlorpyriphos-methyl | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Ronnel | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Chlorpyriphos | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 112% |
| Fenitrothion | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 124% |
| Bromophos-ethyl | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Ethion | mg/kg | 0.1 | Org-008 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 117% |
| Surrogate TCLMX | % | | Org-008 | 97 | 62420-1 | 93 93 RPD:0 | LCS-1 | 88% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| PCBs in Soil | | | | - | | Base II Duplicate II % RPD | | - |
| Date extracted | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| Date analysed | - | | | 29/09/2 011 | 62420-1 | 29/09/2011 29/09/2011 | LCS-1 | 29/09/2011 |
| Arochlor 1016 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1221* | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1232 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1242 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1248 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1254 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 125% |
| Arochlor 1260 | mg/kg | 0.1 | Org-006 | <0.1 | 62420-1 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate TCLMX | % | | Org-006 | 97 | 62420-1 | 93 93 RPD:0 | LCS-1 | 98% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Total Phenolics in Soil | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 30/09/2 011 | 62420-1 | 30/09/2011 30/09/2011 | LCS-1 | 30/09/2011 |
| Date analysed | - | | | 30/09/2 011 | 62420-1 | 30/09/2011 30/09/2011 | LCS-1 | 30/09/2011 |
| Total Phenolics (as Phenol) | mg/kg | 5 | Inorg-030 | 45 | 62420-1 | <5 <5 | LCS-1 | 83% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Acid Extractable metals in soil | | | | | | Base II Duplicate II % RPD | | |
| Date digested | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| Date analysed | - | | | 28/09/2 011 | 62420-1 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| Arsenic | mg/kg | 4 | Metals-020 ICP-AES | <4 | 62420-1 | <4 <4 | LCS-1 | 105% |
| Cadmium | mg/kg | 0.5 | Metals-020 ICP-AES | <0.5 | 62420-1 | <0.5 <0.5 | LCS-1 | 111% |
| L | 1 | 1 | 1 | 1 | 1 | | 1 | 1 |

| Client Reference: 72628.00, Parramatta | | | | | | | | |
|--|--------------|------|-----------------------|----------------|---------------|------------------------------|-----------|---|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Acid Extractable metals in soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Chromium | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62420-1 | 150 150 RPD:0 | LCS-1 | 109% |
| Copper | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62420-1 | 34 34 RPD:0 | LCS-1 | 108% |
| Lead | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62420-1 | 6 6 RPD:0 | LCS-1 | 105% |
| Mercury | mg/kg | 0.1 | Metals-021 CV-AAS | <0.1 | 62420-1 | <0.1 <0.1 | LCS-1 | 109% |
| Nickel | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62420-1 | 120 120 RPD:0 | LCS-1 | 109% |
| Zinc | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62420-1 | 63 60 RPD:5 | LCS-1 | 106% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | | | | 1 |
| Moisture | | | | | | | | |
| Date prepared | - | | | 28/09/2 | | | | |
| | | | | 011 | | | | |
| Date analysed | - | | | 29/09/2 011 | | | | |
| Moisture | % | 0.1 | Inorg-008 | [NT] | | | | |
| QUALITY CONTROL Asbestos ID - soils | UNITS | PQL | METHOD | Blank | | | | |
| Date analysed | - | | | [NT] | | | | |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Miscellaneous Inorg - soil | | | | | | Base II Duplicate II % RPD | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, |
| Date prepared | - | | | 30/09/2 011 | 62420-2 | 30/09/2011 30/09/2011 | LCS-1 | 30/09/2011 |
| Date analysed | - | | | 30/09/2 011 | 62420-2 | 30/09/2011 30/09/2011 LCS | | 30/09/2011 |
| pH 1:5 soil:water | pH Units | | Inorg-001 | [NT] | 62420-2 | 8.2 8.3 RPD:1 | LCS-1 | 100% |
| Chloride, Cl 1:5 soil:water | mg/kg | 2 | Inorg-081 | 2 | 62420-2 | 17 17 RPD:0 | LCS-1 | 86% |
| Sulphate, SO41:5 soil:water | mg/kg | 2 | Inorg-081 | 2 | 62420-2 | 23 22 RPD: 4 | LCS-1 | 100% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| ESP/CEC | | | | | | Base II Duplicate II % RPD | | Recovery |
| Exchangeable Ca | meq/100 g | 0.01 | Metals-009 | <0.01 | 62420-2 | 2.5 2.4 RPD:4 | LCS-1 | 97% |
| ExchangeableK | meq/100 g | 0.01 | Metals-009 | <0.01 | 62420-2 | 0.13 0.12 RPD:8 | LCS-1 | 100% |
| Exchangeable Mg | meq/100 g | 0.01 | Metals-009 | <0.01 | 62420-2 | 0.13 0.13 RPD:0 | LCS-1 | 105% |
| ExchangeableNa | meq/100 g | 0.01 | Metals-009 | <0.01 | 62420-2 | 0.087 0.054 RPD: 47 | LCS-1 | 93% |
| Cation Exchange Capacity | meq/100 g | 1 | Metals-009 | <1.0 | 62420-2 | 2.9 2.7 RPD:7 | [NR] | [NR] |
| ESP | % | 1 | Metals-009 | <1.0 | 62420-2 | 3.0 2.0 RPD:40 | [NR] | [NR] |

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|---|-------|-----|-----------|----------|------------------|----------------------------|-----------------|----------|
| Texture and Salinity | | | | | | Base II Duplicate II % RPD | | Recovery |
| Electrical Conductivity 1:5 soil:water | µS/cm | 1 | Inorg-002 | <1 | [NT] | [NT] | LCS-1 | 108% |
| Texture Value | | | Inorg-002 | [NT] | [NT] | [NT] | [NR] | [NR] |
| ECe | dS/m | 0 | | 0 | [NT] | [NT] | [NR] | [NR] |
| Class | - | | | [NT] | [NT] | [NT] | [NR] | [NR] |
| QUALITY CONTROL | UNITS | 6 | Dup.Sm# | | Duplicate | Spike Sm# | Spike % Recover | у |
| VOCs in soil | | | | Base + I | Duplicate + %RPD | | | |
| Date extracted | - | | [NT] | | [NT] | 62420-35 | 28/09/2011 | |
| Date analysed | - | | [NT] | | [NT] | 62420-35 | 29/09/2011 | |
| Dichlorodifluoromethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Chloromethane | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| Vinyl Chloride | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| Bromomethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Chloroethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Trichlorofluoromethane | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,1-Dichloroethene | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| trans-1,2-dichloroethene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,1-dichloroethane | mg/k | g | [NT] | | [NT] | 62420-35 | 100% | |
| cis-1,2-dichloroethene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| bromochloromethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| chloroform | mg/kg | g | [NT] | | [NT] | 62420-35 | 91% | |
| 2,2-dichloropropane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,2-dichloroethane | mg/kg | g | [NT] | | [NT] | 62420-35 | 86% | |
| 1,1,1-trichloroethane | mg/kg | g | [NT] | | [NT] | 62420-35 | 81% | |
| 1,1-dichloropropene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Cyclohexane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| carbon tetrachloride | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Benzene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| dibromomethane | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,2-dichloropropane | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |
| trichloroethene | mg/kg | g | [NT] | | [NT] | 62420-35 | 85% | |
| bromodichloromethane | mg/kg | g | [NT] | | [NT] | 62420-35 | 90% | |
| trans-1,3-dichloropropene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| cis-1,3-dichloropropene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,1,2-trichloroethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| Toluene | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| 1,3-dichloropropane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| dibromochloromethane | mg/kg | g | [NT] | | [NT] | 62420-35 | 89% | |
| 1,2-dibromoethane | mg/kg | g | [NT] | | [NT] | [NR] | [NR] | |
| tetrachloroethene | mg/ke | g | [NT] | | [NT] | 62420-35 | 91% | |
| 1,1,1,2-tetrachloroethane | mg/ke | g | [NT] | | [NT] | [NR] | [NR] | |
| chlorobenzene | mg/k | g | [NT] | | [NT] | [NR] | [NR] | |

72628.00, Parramatta

Client Reference:

| | | Client Referenc | e: 72628.00, Parrama | atta | |
|---|-------|-----------------|--------------------------|-----------|------------------|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| VOCs in soil | | | Base + Duplicate + % RPD | | |
| Ethylbenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| bromoform | mg/kg | [NT] | [NT] | [NR] | [NR] |
| m+p-xylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| styrene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,1,2,2-tetrachloroethane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| o-Xylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,3-trichloropropane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| isopropylbenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| bromobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| n-propyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 2-chlorotoluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 4-chlorotoluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,3,5-trimethyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| tert-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,4-trimethyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,3-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| sec-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,4-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 4-isopropyl toluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| n-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2-dibromo-3- chloropropane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,4-trichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| hexachlorobutadiene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,3-trichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| <i>Surrogate</i> Dibromofluorometha | % | [NT] | [NT] | 62420-35 | 102% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | [NT] | [NT] | 62420-35 | 119% |
| Surrogate Toluene-d8 | % | [NT] | [NT] | 62420-35 | 105% |
| Surrogate 4- Bromofluorobenzene | % | [NT] | [NT] | 62420-35 | 100% |

| Client Reference: 72628.00, Parramatta | | | | | | | | |
|---|-------|----------|--------------------------|-----------|------------------|--|--|--|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | |
| vTRH&BTEX in Soil | | | Base + Duplicate + % RPD | | | | | |
| Date extracted | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | |
| Date analysed | - | 62420-52 | 29/09/2011 29/09/2011 | 62420-35 | 29/09/2011 | | | |
| vTRHC6 - C9 | mg/kg | 62420-52 | <25 <25 | 62420-35 | 83% | | | |
| Benzene | mg/kg | 62420-52 | <0.2 <0.2 | 62420-35 | 76% | | | |
| Toluene | mg/kg | 62420-52 | <0.5 <0.5 | 62420-35 | 93% | | | |
| Ethylbenzene | mg/kg | 62420-52 | <1 <1 | 62420-35 | 82% | | | |
| m+p-xylene | mg/kg | 62420-52 | <2 <2 | 62420-35 | 83% | | | |
| o-Xylene | mg/kg | 62420-52 | <1 <1 | 62420-35 | 87% | | | |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | 62420-52 | 128 131 RPD:2 | 62420-35 | 109% | | | |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | |
| sTRH in Soil (C10-C36) | | | Base + Duplicate + % RPD | | | | | |
| Date extracted | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | |
| Date analysed | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | |
| TRHC 10 - C14 | mg/kg | 62420-52 | <50 <50 | 62420-35 | 99% | | | |
| TRHC 15 - C28 | mg/kg | 62420-52 | <100 <100 | 62420-35 | 101% | | | |
| TRHC29 - C36 | mg/kg | 62420-52 | <100 <100 | 62420-35 | 97% | | | |
| Surrogate o-Terphenyl | % | 62420-52 | 85 88 RPD:3 | 62420-35 | 71% | | | |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | |
| PAHs in Soil | | | Base + Duplicate + %RPD | | | | | |
| Date extracted | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | |
| Date analysed | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 29/09/2011 | | | |
| Naphthalene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 96% | | | |
| Acenaphthylene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Acenaphthene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Fluorene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 102% | | | |
| Phenanthrene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 98% | | | |
| Anthracene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Fluoranthene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 96% | | | |
| Pyrene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 101% | | | |
| Benzo(a)anthracene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Chrysene | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 102% | | | |
| Benzo(b+k)fluoranthene | mg/kg | 62420-52 | <0.2 <0.2 | [NR] | [NR] | | | |
| Benzo(a)pyrene | mg/kg | 62420-52 | <0.05 <0.05 | 62420-35 | 98% | | | |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Dibenzo(a,h)anthracene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Benzo(g,h,i)perylene | mg/kg | 62420-52 | <0.1 <0.1 | [NR] | [NR] | | | |
| Surrogate p-Terphenyl- d14 | % | 62420-52 | 97 95 RPD: 2 | 62420-35 | 95% | | | |

| Client Reference: 72628.00, Parramatta | | | | | | | |
|---|-------|---------|--------------------------------------|-----------|------------------|--|--|
| QUALITY CONTROL Organochlorine Pesticides in soil | UNITS | Dup.Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery | | |
| Date extracted | - | [NT] | [NT] | 62420-35 | 28/09/2011 | | |
| Date analysed | - | [NT] | [NT] | 62420-35 | 29/09/2011 | | |
| HCB | mg/kg | [NT] | [NT] | [NR] | [NR] | | |
| alpha-BHC | mg/kg | [NT] | [NT] | 62420-35 | 74% | | |
| gamma-BHC | mg/kg | [NT] | [NT] | [NR] | [NR] | | |
| beta-BHC | mg/kg | [NT] | [NT] | 62420-35 | 88% | | |
| Heptachlor | mg/kg | [NT] | [NT] | 62420-35 | 63% | | |
| delta-BHC | mg/kg | [NT] | [NT] | [NR] | [NR] | | |
| Aldrin | mg/kg | [NT] | [NT] | 62420-35 | 66% | | |
| Heptachlor Epoxide | mg/kg | [NT] | [NT] | 62420-35 | 70% | | |
| 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] | 62420-35 | 83% | | |
| Dieldrin | mg/kg | [NT] | [NT] | 62420-35 | 68% | | |
| Endrin | mg/kg | [NT] | [NT] | 62420-35 | 60% | | |
| pp-DDD | mg/kg | [NT] | [NT] | 62420-35 | 83% | | |
| 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] | 62420-35 | 64% | | |
| Methoxychlor | mg/kg | [NT] | [NT] | [NR] | [NR] | | |
| Surrogate TCLMX | % | [NT] | [NT] | 62420-35 | 91% | | |
| | | Client Referenc | e: 72628.00, Parrama | atta | | | | | |
|-----------------------------|-------|-----------------|--------------------------|-----------|------------------|--|--|--|--|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | | |
| Organophosphorus | | | Base + Duplicate + %RPD | | | | | | |
| | | | | | | | | | |
| Date extracted | - | [NT] | [NT] | 62420-35 | 28/09/2011 | | | | |
| Date analysed | - | [NT] | [NT] | 62420-35 | 29/09/2011 | | | | |
| Diazinon | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Dimethoate | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Chlorpyriphos-methyl | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Ronnel | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Chlorpyriphos | mg/kg | [NT] | [NT] | 62420-35 | 104% | | | | |
| Fenitrothion | mg/kg | [NT] | [NT] | 62420-35 | 114% | | | | |
| Bromophos-ethyl | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Ethion | mg/kg | [NT] | [NT] | 62420-35 | 113% | | | | |
| Surrogate TCLMX | % | [NT] | [NT] | 62420-35 | 91% | | | | |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | | |
| PCBs in Soil | | | Base + Duplicate + %RPD | | | | | | |
| Date extracted | - | [NT] | [NT] | 62420-35 | 28/09/2011 | | | | |
| Date analysed | - | [NT] | [NT] | 62420-35 | 29/09/2011 | | | | |
| Arochlor 1016 | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Arochlor 1221* | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Arochlor 1232 | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Arochlor 1242 | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Arochlor 1248 | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Arochlor 1254 | mg/kg | [NT] | [NT] | 62420-35 | 125% | | | | |
| Arochlor 1260 | mg/kg | [NT] | [NT] | [NR] | [NR] | | | | |
| Surrogate TCLMX | % | [NT] | [NT] | 62420-35 | 101% | | | | |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | | |
| Total Phenolics in Soil | | | Base + Duplicate + % RPD | | | | | | |
| Date extracted | - | [NT] | [NT] | 62420-7 | 30/09/2011 | | | | |
| Date analysed | - | [NT] | [NT] | 62420-7 | 30/09/2011 | | | | |
| Total Phenolics (as Phenol) | mg/kg | [NT] | [NT] | 62420-7 | 79% | | | | |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery | | | | |
| Acid Extractable metals in | | | Base + Duplicate + %RPD | | | | | | |
| soil | | | | | | | | | |
| Date digested | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | | |
| Date analysed | - | 62420-52 | 28/09/2011 28/09/2011 | 62420-35 | 28/09/2011 | | | | |
| Arsenic | mg/kg | 62420-52 | <4 <4 | 62420-35 | 117% | | | | |
| Cadmium | mg/kg | 62420-52 | <0.5 <0.5 | 62420-35 | 100% | | | | |
| Chromium | mg/kg | 62420-52 | 6 4 RPD:40 | 62420-35 | 102% | | | | |
| Copper | mg/kg | 62420-52 | <1 <1 | 62420-35 | # | | | | |
| Lead | mg/kg | 62420-52 | 4 3 RPD:29 | 62420-35 | 128% | | | | |
| Mercury | mg/kg | 62420-52 | <0.1 <0.1 | 62420-35 | 115% | | | | |
| Nickel | mg/kg | 62420-52 | 1 <1 | 62420-35 | 121% | | | | |
| Zinc | mg/kg | 62420-52 | 1 1 RPD: 0 | 62420-35 | # | | | | |

| | | Client Referenc | e: 72628.00, Parramatt |
|---|--------------|------------------------|--------------------------------------|
| QUALITY CONTROL Miscellaneous Inorg - soil | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD |
| Date prepared | - | 62420-51 | 30/09/2011 30/09/2011 |
| Date analysed | - | 62420-51 | 30/09/2011 30/09/2011 |
| pH 1:5 soil:water | pHUnits | 62420-51 | 6.9 6.9 RPD:0 |
| Chloride, Cl 1:5 soil:water | mg/kg | [NT] | [NT] |
| Sulphate, SO4 1:5 soil:water | mg/kg | [NT] | [NT] |
| QUALITY CONTROL ESP/CEC | UNITS | Dup. Sm# | Duplicate Base + Duplicate + %RPD |
| Exchangeable Ca | meq/100 g | 62420-2 | 2.5 2.4 RPD:4 |
| Exchangeable K | meq/100 g | 62420-2 | 0.13 0.12 RPD:8 |
| ExchangeableMg | meq/100 g | 62420-2 | 0.13 0.13 RPD:0 |
| ExchangeableNa | meq/100 g | 62420-2 | 0.087 0.054 RPD: 47 |
| Cation Exchange Capacity | meq/100 g | 62420-2 | 2.9 2.7 RPD:7 |
| ESP | % | 62420-2 | 3.0 2.0 RPD:40 |

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 30-40g of sample in its own container.

Sample 62420-35; Chrysotile and amosite asbestos identified embedded in several fragments of fibre cement (total weight 14.8897g). It is estimated that the fibre cement contains up to 7% asbestos fibres by weight. This calculates to 1.0423g of asbestos fibres, which in 27.62g of soil is 37.74g/kg (i.e. > reporting limit for the method of 0.1g/kg).

Acid Extractable Metals in Soil:# Percent recovery is not possible to report due to the high concentration of the element/s in the sample/s. However an acceptable recovery was obtained for the LCS.

| Asbestos ID was analysed by Approved Identifier: | Paul Ching |
|---|------------|
| Asbestos ID was authorised by Approved Signatory: | Paul Ching |
| | |

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

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. **LCS (Laboratory Control Sample)** : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



CHAIN OF CUSTODY

| Project Nan Project No: Project Mgr Email: Date Requi | | To: Envirolab Services Pty Ltd 12 Ashley Street, CHATSWOOD NSW 2067 Attn: Tania Notaras Phone: 9910 6200 Fax: 9910 6201 Email: enquires@envirolabservices.com.au | | | | | | | | | | | | | | | | |
|---|-----------------|--|------------------|-----------------------|-------------------|-----------------|---------------------------|----------|----------|----------|------------|------------|----------------------------|------------------|-----------------------------|------------------------|-----------|----------|
| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W – water | Container type | Heavy Metals | втех/ трн | оср/ орр | РСВ | РАН | Phenol | Asbestos | Textural Classification | Hq | U E | Sulphate / Chloride | ESP | V0CS |
| BH01 | 0.2-0.3 | | 23/9/11 | S | G/P | \times | Х | \times | X | \times | \times | \times | | | | | | X |
| | 0.5-0.6 | 2 | 23/9/11 | S | G/P | | | | | | | | \times | × | \times | \times | \times | |
| | 1.0-1.1 | 3 | 23/9/11 | s | G/P | \times | \times | | | \times | | | | | | | | |
| | 2.0-2.1 | 4 | 23/9/11 | s | G/P | | | | | | | | | | | | | |
| | 3.0-3.1 | 5 | 23/9/11 | S | G/P | | | | | | | | | | | <u>ičauka) –</u> j | Participa | |
| BH02 | 0.1-0.2 | 6 | 23/9/11 | s | G/P | | ML 1971 | | | | | | | | antinos Ao | 12 Chaiswood I | SV/ 2067 | |
| | 0.4-0.5 | 7 | 23/9/11 | s | G/P | \mathbf{X} | \times | \times | \times | \times | \times | X | | | Job No: | Ph: (02) | \$10 8200 | _ |
| | 1.0-1.1 | 8 | 23/9/11 | s | G/P | \times | \times | | | \times | | | | - | | 26191 | | |
| | 2.0-2.1 | 9 | 23/9/11 | s | G/P | | | | | | | | | | Time Receive | d: 17:2 | ococ | 14:00 |
| | 3.0-3.1 | 10 | 23/9/11 | s | G/P | | | | | | | | | | Received by: | JHi€ mbient | • | samples. |
| BH03 | 0.1-0.2 | [] | 22/9/11 | s | G/P | | | | | | | | | I | Cooling: IceA | cepace | | |
| | 0.5-0.6 | 12 | 22/9/11 | S | G/P | \times | X | \times | \times | \times | \times | $ \times $ | | | e |) - HOME | | |
| Lab Report No Send Results I | to: Douglas | Partner | s Address: | <u>96 H</u> | ermitage | e Road, \ | West Ryc | le 2114 | | | | 'n | Pho Fax | ne: (02 : (02 | 2) 9809 066 2) 9809 409 | 96 95 | | |
| Relinquished by | Kat Juger | ∠ Sigr Siar | ned: | genie - | | Date & 1 | lime: <u>2</u> 6 fime: | 19/11 | Re Re | eceived | ву: Ву: | 1the | | Date Date | & Time: <u>2</u> & Time: | 5/9/11 | 17.20 | 2 - |

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| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Pty Ltd |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street, CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W – water | Container type | Heavy Metals | ВТЕХ/ ТРН | OCP/ OPP | РСВ | PAH | Phenol | Asbestos | Textural Classification | Hq | EC | Sulphate / Chloride | ESP | voc |
|---|---|-----------|------------------|-----------------------|-------------------|-----------------|---------------------|----------------------------------|------------|-------------------------|----------|----------|----------------------------|--|--|------------------------------------|------|------|
| BH03 | 1.0-1.1 | IB | 22/9/11 | s | G/P | | | | | | | | Х | × | \times | \times | | |
| | 1.5-1.6 | 14 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| | 2.0-2.1 | IŚ | 22/9/11 | s | G/P | | | | | | | | | annen, Al Alexandro, Gurran an an anna a' a dao airdin | | | ···· | |
| | 2.9-3.0 | 16 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| BH04 | 0.2-0.3 | 17 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| | 0.5-0.6 | 18 | 22/9/11 | S | G/P | | | | | | | | | | | | | |
| | 1.0-1.1 | 19 | 22/9/11 | s | G/P | \times | \times | | | $\left \times \right $ | | | | | | | | |
| | 1.5-1.6 | 20 | 22/9/11 | s | G/P | | | | | | | | | × | × | · · · · · · | | |
| | 2.0-2.1 | 21 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| BH05 | 0.4-0.5 | 22 | 22/9/11 | s | G/P | X | \times | Х | \times | X | \times | \times | | \times | \times | \times | X | |
| | 1.0-1.1 | 23 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| | 1.5-1.6 | 24 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| Lab Report N Send Results Relinguished b | o. <u>to:</u> Dougla y: <i>Kali</i> | as Partr | ners Addre | iss: | 96 Herm | iitage R Da | oad, We te & Tim | st Ryde 2 ^{e:} _24/9 | 114 /(/ | F | Receive | d By: | Atrie | Phon Fax: | e: (02) 9 (02) 9 Date & ⁻ | 809 0666 9809 4095 Fime: 26/ | 9/11 | 1720 |
| Relinquished by: Signed: Date & Time: Received By: Date & Time: | | | | | | | | | | | | | | | | | | |

| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Pty Ltd |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street, CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W – water | Container type | Heavy Metals | BTEX/ TPH | OCP/ OPP | РСВ | РАН | Phenol | Asbestos | Textural Classification | Ħ | О Ш | Sulphate / Chloride | ESP | V0C5 |
|-----------------|---|-----------|------------------|-----------------------|-------------------|-----------------|--------------|----------|----------|--------------|----------|----------|----------------------------|----------|----------|------------------------|---|------|
| BH05 | 2.0-2.1 | 25 | 22/9/11 | S | G/P | | | | | | | | | | | 1 | | |
| | 3.0-3.1 | 26 | 22/9/11 | s | G/P | | | | | | | | a | ***** | | | , | |
| BH06 | 0.2-0.3 | 27 | 23/9/11 | s | G/P | \times | \times | X | \times | \times | \times | \times | | | | | · | |
| | 0.4-0.5 | 28 | 23/9/11 | S | G/P | | | | | | | | | | | | | |
| | 0.7-0.8 | 29 | 23/9/11 | S | G/P | | | | | | | | | | | | | |
| | 1.1-1.2 | 30 | 23/9/11 | S | G/P | | | | | | | | X | × | \times | | | |
| | <u>2.0-2.</u> 1 | 31 | 23/9/11 | S | G/P | | | | | | | | | | | | | |
| | 2.9-3.2 | 32 | 23/9/11 | S | G/P | | | | | | | | | | | | | |
| BH07 | 0.1-0.2 | 33 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| | 0.5-0.6 | 34 | 22/9/ 1 1 | S | G/P | | | | | | | | | | | | | |
| * | 0.8-1.0 | 35 | 22/9/11 | S | G/P | \times | X | \times | X | \mathbf{X} | X | X | | \times | \times | | | X |
| | 1.5-1.6 | 36 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| Lab Report No | | | | | | | | | | | | | Pho | ne: (02) | 9809 066 | 6 | | |
| Send Results t | o: Douglas | Partner | s Address: | 96 H | ermitag | e Road, ' | West Ry | de 2114 | | | | | Fax | : (02) | 9809 409 | 95 | | |
| Relinquished by | Kat Suga | Sigi سني | | 2 | در | Date & | Time: 🏒 | 191a - | F | leceived | By: | Mi | | Date & | Time: ጋ | 6/9/11 | 17:20 | |
| Relinquished by | Relinquished by: Signed: Date & Time: Received By: Date & Time: | | | | | | | | | | | | | 1 | | | | |
| *9 | * BH07/0.8-1.0 -> If figurents present in asbertos sample bay please test * | | | | | | | | | | | | | 1 | | | | |



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| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Ptv I td |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W - water | Container type | Heavy Metais | BTEX/ TPH | оср/ орр | PCB | PAH | Phenol | Asbestos | Textural Classification | Hđ | EC | Sulphate / Chloride | ESP |
|---------------------------------------|-----------------|---------------------|------------------|-----------------------|-------------------|-----------------|---|----------|-----------------------------|----------|----------|----------|----------------------------|----------|----------------------|------------------------|-------|
| BH07 | 2.0-2.1 | 37 | 22/9/11 | s | G/P | | , <u>, , , , , , , , , , , , , , , , , , </u> | | | | | | | | | | |
| | 2.9-3.0 | 38 | 22/9/11 | s | G/P | | | | | | | | | | | | |
| BH08 | 0.1-0.2 | 39 | 22/9/11 | S | G/P | \times | \times | \times | \times | Х | \times | \times | | | | | |
| | 0.3-0.4 | 40 | 22/9/11 | s | G/P | | | | | | | | | X | X | | |
| | 1.0-1.1 | 41 | 22/9/11 | S | G/P | | | | | | | | | | | | |
| | 1.5-1.6 | 42 | 22/9/11 | S | G/P | | | | | | | | | | | | |
| | 2.0-2.1 | 43 | 22/9/11 | s | G/P | | | | | | | | X | \times | \times | × | × |
| ····· | 2.9-3.0 | 44 | 22/9/11 | S | G/P | | | | | | | | | | | | |
| BH09 | 0.1-0.3 | 45 | 23/9/11 | s | G/P | | | | | | | | | | | | |
| | 0.5-0.6 | 46 | 23/9/11 | S | G/P | \times | X | \times | \times | \times | Х | \times | | | | - | |
| | 1.0-1.1 | 47 | 23/9/11 | s | G/P | \times | X | | | \times | | | | X | \times | | |
| | 2.0-2.1 | 48 | 23/9/11 | S | G/P | | | | | | | | | | | | |
| Lab Report No. Send Results to | o: Douglas | Partner | S Address: | 96 H | ermitage | Road, V | West Ryd | de 2114 | | | | <i>.</i> | Phor Fax: | ne: (02) | 9809 066 9809 409 | 6 5 | |
| Relinquished by: | Marti Say | Sigr تمريد <u>،</u> | ned: | ~ | - | Date & | Time: 24 | 19/01 | R | eceived | By: | The | | Date 8 | Time: 2 | 6/9/11 | 17:20 |
| Relinquisned by: Signed: Date & Time: | | | | | | | | | Received By: U Date & Time: | | | | | • • | | | |

| Project Nar | ne: Co | | To: Envirolab Services Pty Ltd | | | | | | | | | | | | | | | |
|-----------------|-----------------|--------------------------------|--------------------------------|-----------------------|----------------------|-----------------|--------------|----------|----------|----------|-------------|-----------|----------------------------|-----------|-----------------|------------------------|-----------------|----------|
| Project No: | 726 | 528.00. | | . Sam | pler: Ka | ite Sarg | ent | | 12 | Ashle | y Stre | et, CH/ | ATSWOO | DD NSW : | 2067 | | | |
| Project Mgr | : PG | | Mob. Phone | e: 0439 | 9 498 5 ⁻ | 13 | | | At | tn: Ta | - nia No | taras | | | | | | |
| Email: | kat | e.sarge | nt@douglasp | artner | s.com.a | u | | | P۲ | one: 9 | 910 6 | 200 Fa | ax: 9910 | 6201 | | | | |
| Date Requi | red: Sta | ndard | | Lab | Quote I | No | | | En | nail: er | nquires | @env | irolabserv | /ices.com | .au | | | |
| Sam De D | Sample Depth | Lab ID | Sampling Date | S - soil W - water | Container type | Heavy Metals | втех/ ТРН | оср/ орр | РСВ | HYd | Phenol | Asbestos | Textural Classification | Ha | EC | Sulphate / Chloride | ESP | VOCS |
| BH09 | 2.9-3.0 | 49 | 23/9/11 | S | G/P | | | | | | | | | | | | | |
| BH10 | 0.3-0.4 | 50 | 23/9/11 | s | G/P | | | | | | | | | | | | <u>-</u> | |
| | 0.5-0.6 | 51 | 23/9/11 | s | G/P | \times | \times | | | \times | | | | X | X | | | |
| | 1.0-1.1 | 52 | 23/9/11 | S | G/P | \times | \times | \times | \times | \times | Х | \times | | | | | | |
| | 1.7-1.8 | 53 | 23/9/11 | S | G/P | X | \times | \times | \times | X | \times | \times | X | \times | X | X | | X |
| | 2.5-2.6 | 54 | 23/9/11 | s | G/P | | | | | | | | | | | ······ | | |
| | 3.1-3.2 | 55 | 23/9/11 | s | G/P | | | | | | | | | | | | , | |
| Dup04 | | - | 22/9/11 | S | G/P | X | \mathbf{X} | | | X | | | | * Plea | ise Seud | 6 56 | Stiliera | tories # |
| Dup07 | 4···B | 56 | 22/9/11 | s | G/P | | | | | | | | | | | | | |
| Dup08 | | 57 | 23/9/11 | s | G/P | \times | \times | | | \times | | | | | | - | | |
| TB1 | | 58 | 22/9/11 | s | G | | X | | | | | | | | | | | |
| TS1 | | 59 | 22/9/11 | S | G | | X | | | | | | | | | | | |
| TB2 | | 60 | 23/9/11 | s | G | | \times | | | | | | | | | | | |
| TS2 | | 61 | 23/9/11 | s | G | | \times | | | | | | | | | | | |
| Lab Report No | | •••••• | | | | | | | | | | | Pho | ne: (02) | 9809 066 | 6 | | ····· |
| Send Results t | o: Douglas | Partne | rs Address: | 96 H | ermitage | e Road, V | West Ryc | le 2114 | | | | <u>//</u> | Fax | : (02) | 9809 409 | 5 | | |
| Relinquished by | tal jug | Sigi محر يوم Cia | ned: | per- | | Date & T | Fime: | c/9/11 | ٦ | leceived | By: (| Hie | | Date 8 | Time: <u>26</u> | /9/11 | 7:20 | |
| Reinquisited by | · | | | | | | ime: | | H | | гву: v | | | Date & | a time: | | | |
| RHC | 0.4-05 | 62 | 1 | | | | | | | | | | | | | | | |
| DUM | 1.1-1.7 | 00 7 11 | a. | | | | | | | | | | | | | Page _ 5 | of _ 5 _ | |
| SHS | 1.1.1.2 | - 07 | J | | | | | | | | | | | | | | | |



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

CERTIFICATE OF ANALYSIS

62422

Client: Douglas Partners 96 Hermitage Rd West Ryde NSW 2114

Attention: Kate Sargent

Sample log in details:

Your Reference: No. of samples: Date samples received / completed instructions received

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: 4/10/11 4/10/11 1 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. Tests not covered by NATA are denoted with *.

Results Approved By:

Jacinta/Hurst Laboratory Manager

Alana Nancy Zhang

Chemist

72628.00, Parramatta

/

26/09/2011

28 Soils

21/09/2011

Rhian Morgan Reporting Supervisor

Sarlamis Inorganics Supervisor

Lulu Guo Approved Signatory

Envirolab Reference: **Revision No:**

62422 R 00



| VOCs in soil | | | | |
|---------------------------|-------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil |
| Date extracted | _ | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | _ | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Dichlorodifluoromethane | ma/ka | ~1 | ~1 | -1 |
| Chloromothana | mg/kg | -1 | ~1 | <1 |
| | mg/kg | | <1 | <1 |
| Vinyi Chionae | mg/kg | <1 | <1 | <1 |
| Bromometriane | mg/kg | <1 | <1 | <1 |
| Chloroethane | mg/kg | <1 | <1 | <1 |
| Trichlorofluoromethane | mg/kg | <1 | <1 | <1 |
| 1,1-Dichloroethene | mg/kg | <1 | <1 | <1 |
| trans-1,2-dichloroethene | mg/kg | <1 | <1 | <1 |
| 1,1-dichloroethane | mg/kg | <1 | <1 | <1 |
| cis-1,2-dichloroethene | mg/kg | <1 | <1 | <1 |
| bromochloromethane | mg/kg | <1 | <1 | <1 |
| chloroform | mg/kg | <1 | <1 | <1 |
| 2,2-dichloropropane | mg/kg | <1 | <1 | <1 |
| 1,2-dichloroethane | mg/kg | <1 | <1 | <1 |
| 1,1,1-trichloroethane | mg/kg | <1 | <1 | <1 |
| 1,1-dichloropropene | mg/kg | <1 | <1 | <1 |
| Cyclohexane | mg/kg | <1 | <1 | <1 |
| carbon tetrachloride | mg/kg | <1 | <1 | <1 |
| Benzene | mg/kg | <0.2 | <0.2 | <0.2 |
| dibromomethane | mg/kg | <1 | <1 | <1 |
| 1,2-dichloropropane | mg/kg | <1 | <1 | <1 |
| trichloroethene | mg/kg | <1 | <1 | <1 |
| bromodichloromethane | mg/kg | <1 | <1 | <1 |
| trans-1,3-dichloropropene | mg/kg | <1 | <1 | <1 |
| cis-1,3-dichloropropene | mg/kg | <1 | <1 | <1 |
| 1,1,2-trichloroethane | mg/kg | <1 | <1 | <1 |
| Toluene | mg/kg | <0.5 | <0.5 | <0.5 |
| 1,3-dichloropropane | mg/kg | <1 | <1 | <1 |
| dibromochloromethane | mg/kg | <1 | <1 | <1 |
| 1,2-dibromoethane | mg/kg | <1 | <1 | <1 |
| tetrachloroethene | mg/kg | <1 | <1 | <1 |
| 1,1,1,2-tetrachloroethane | mg/kg | <1 | <1 | <1 |
| chlorobenzene | mg/ka | <1 | <1 | <1 |
| Ethylbenzene | ma/ka | <1 | <1 | <1 |
| bromoform | ma/ka | <1 | <1 | <1 |
| m+n-xvlene | ma/ka | <2 | <2 | 2 |
| styrene | ma/ka | ~1 | ~1 | - |
| 1 1 2 2-tetrachloroethane | ma/ka | ~1 | ~1 | ~1 |
| o-Xvlene | ma/ka | <1 | ~1 | ~1 |
| 1.2.3-trichloropropane | ma/ka | <1 | <1 | <1 |
| .,_,e | | | - 1 | |

| VOCs in soil | | | | |
|--------------------------------|-------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil |
| isopropylbenzene | mg/kg | <1 | <1 | <1 |
| bromobenzene | mg/kg | <1 | <1 | <1 |
| n-propyl benzene | mg/kg | <1 | <1 | <1 |
| 2-chlorotoluene | mg/kg | <1 | <1 | <1 |
| 4-chlorotoluene | mg/kg | <1 | <1 | <1 |
| 1,3,5-trimethyl benzene | mg/kg | <1 | <1 | <1 |
| tert-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,2,4-trimethyl benzene | mg/kg | <1 | <1 | <1 |
| 1,3-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| sec-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,4-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| 4-isopropyl toluene | mg/kg | <1 | <1 | <1 |
| 1,2-dichlorobenzene | mg/kg | <1 | <1 | <1 |
| n-butyl benzene | mg/kg | <1 | <1 | <1 |
| 1,2-dibromo-3-chloropropane | mg/kg | <1 | <1 | <1 |
| 1,2,4-trichlorobenzene | mg/kg | <1 | <1 | <1 |
| hexachlorobutadiene | mg/kg | <1 | <1 | <1 |
| 1,2,3-trichlorobenzene | mg/kg | <1 | <1 | <1 |
| Surrogate Dibromofluorometha | % | 106 | 104 | 100 |
| Surrogate aaa-Trifluorotoluene | % | 136 | 134 | 116 |
| Surrogate Toluene-d8 | % | 110 | 109 | 106 |
| Surrogate 4-Bromofluorobenzene | % | 100 | 101 | 100 |

| vTRH&BTEX in Soil | | | | | | |
|--------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-6 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.5-2.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| vTRHC6 - C9 | 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 |
| Surrogate aaa-Trifluorotoluene | % | 136 | 126 | 134 | 125 | 116 |

| vTRH & BTEX in Soil | | |
|--------------------------------|-------|------------|
| Our Reference: | UNITS | 62422-27 |
| Your Reference | | Dup02 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| Date extracted | - | 27/09/2011 |
| Date analysed | - | 28/09/2011 |
| vTRHC6 - C9 | mg/kg | <25 |
| Benzene | mg/kg | <0.2 |
| Toluene | mg/kg | <0.5 |
| Ethylbenzene | mg/kg | <1 |
| m+p-xylene | mg/kg | <2 |
| o-Xylene | mg/kg | <1 |
| Surrogate aaa-Trifluorotoluene | % | 127 |

| sTRH in Soil (C10-C36) | | | | | | |
|------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-6 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.5-2.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| TRHC 10 - C 14 | mg/kg | <50 | <50 | <50 | <50 | <50 |
| TRHC 15 - C28 | mg/kg | <100 | <100 | <100 | <100 | <100 |
| TRHC∞ - C∞ | mg/kg | <100 | <100 | <100 | <100 | <100 |
| Surrogate o-Terphenyl | % | 92 | 91 | 91 | 92 | 92 |

| sTRH in Soil (C10-C36) | | |
|------------------------|-------|------------|
| Our Reference: | UNITS | 62422-27 |
| Your Reference | | Dup02 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| Date extracted | - | 27/09/2011 |
| Date analysed | - | 28/09/2011 |
| TRHC 10 - C 14 | mg/kg | <50 |
| TRHC 15 - C28 | mg/kg | <100 |
| TRHC29 - C36 | mg/kg | <100 |
| Surrogate o-Terphenyl | % | 92 |

| PAHs in Soil | | | | | | |
|---------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-6 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.5-2.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date extracted | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Naphthalene | mg/kg | 0.2 | <0.1 | <0.1 | <0.1 | <0.1 |
| Acenaphthylene | mg/kg | 0.3 | <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 | 3.1 | 0.4 | <0.1 | <0.1 | 0.1 |
| Anthracene | mg/kg | 0.6 | <0.1 | <0.1 | <0.1 | <0.1 |
| Fluoranthene | mg/kg | 3.1 | 0.7 | 0.2 | <0.1 | 0.2 |
| Pyrene | mg/kg | 2.7 | 0.6 | 0.2 | <0.1 | 0.2 |
| Benzo(a)anthracene | mg/kg | 1.4 | 0.3 | 0.1 | <0.1 | <0.1 |
| Chrysene | mg/kg | 1.1 | 0.3 | 0.1 | <0.1 | 0.1 |
| Benzo(b+k)fluoranthene | mg/kg | 1.6 | 0.4 | <0.2 | <0.2 | <0.2 |
| Benzo(a)pyrene | mg/kg | 1.0 | 0.25 | 0.08 | <0.05 | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.5 | 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 | 0.4 | 0.1 | <0.1 | <0.1 | <0.1 |
| Surrogate p-Terphenyl-d14 | % | 103 | 103 | 93 | 95 | 96 |

| PAHs in Soil | | |
|---------------------------|-------|------------|
| Our Reference: | UNITS | 62422-27 |
| Your Reference | | Dup02 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| Date extracted | - | 27/09/2011 |
| Date analysed | - | 28/09/2011 |
| Naphthalene | mg/kg | <0.1 |
| Acenaphthylene | mg/kg | <0.1 |
| Acenaphthene | mg/kg | <0.1 |
| Fluorene | mg/kg | <0.1 |
| Phenanthrene | mg/kg | <0.1 |
| Anthracene | mg/kg | <0.1 |
| Fluoranthene | mg/kg | <0.1 |
| Pyrene | mg/kg | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 |
| Chrysene | mg/kg | <0.1 |
| Benzo(b+k)fluoranthene | mg/kg | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 |
| Surrogate p-Terphenyl-d14 | % | 94 |

| Organochlorine Pesticides in soil | | | | | |
|-----------------------------------|-------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date extracted | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| НСВ | 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 TCLMX | % | 98 | 84 | 86 | 86 |

| Organophosphorus Pesticides | | | | | |
|-----------------------------|-------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date extracted | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Diazinon | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Dimethoate | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos-methyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Ronnel | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Chlorpyriphos | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Fenitrothion | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Bromophos-ethyl | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Ethion | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogate TCLMX | % | 98 | 84 | 86 | 86 |

| PCBs in Soil | | | | | |
|-----------------|-------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date extracted | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Date analysed | - | 01/10/2011 | 01/10/2011 | 01/10/2011 | 01/10/2011 |
| Arochlor 1016 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1221* | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1232 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1242 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1248 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1254 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Arochlor 1260 | mg/kg | <0.1 | <0.1 | <0.1 | <0.1 |
| Surrogate TCLMX | % | 98 | 84 | 86 | 86 |

| Total Phenolics in Soil | | | | | |
|-----------------------------|-------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date extracted | - | 29/09/2011 | 29/09/2011 | 29/09/2011 | 29/09/2011 |
| Date analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Total Phenolics (as Phenol) | mg/kg | <5 | <5 | <5 | <5 |

| Acid Extractable metals in soil | | | | | | |
|---------------------------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-6 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.5-2.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date digested | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Arsenic | mg/kg | 4 | <4 | <4 | <4 | <4 |
| Cadmium | mg/kg | 10 | <0.5 | <0.5 | <0.5 | <0.5 |
| Chromium | mg/kg | 120 | 6 | 3 | 2 | 54 |
| Copper | mg/kg | 240 | 9 | 3 | 3 | 24 |
| Lead | mg/kg | 150 | 51 | 4 | 5 | 71 |
| Mercury | mg/kg | 0.7 | 0.2 | <0.1 | <0.1 | 0.3 |
| Nickel | mg/kg | 100 | 4 | 3 | 2 | 14 |
| Zinc | mg/kg | 160 | 46 | 5 | 5 | 100 |

| Acid Extractable metals in soil | | |
|---------------------------------|-------|------------|
| Our Reference: | UNITS | 62422-27 |
| Your Reference | | Dup02 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| Date digested | - | 27/09/2011 |
| Date analysed | - | 27/09/2011 |
| Arsenic | mg/kg | <4 |
| Cadmium | mg/kg | <0.5 |
| Chromium | mg/kg | 4 |
| Copper | mg/kg | 3 |
| Lead | mg/kg | 11 |
| Mercury | mg/kg | <0.1 |
| Nickel | mg/kg | 2 |
| Zinc | mg/kg | 9 |

| Miscellaneous Inorg - soil | | | | | |
|------------------------------|----------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-5 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.0-2.1 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil |
| Date prepared | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| pH 1:5 soil:water | pH Units | 9.8 | 9.5 | 9.0 | 9.5 |
| Chloride, Cl 1:5 soil:water | mg/kg | 28 | [NA] | [NA] | [NA] |
| Sulphate, SO4 1:5 soil:water | mg/kg | 310 | [NA] | [NA] | [NA] |

| ESP/CEC | | |
|--------------------------|----------|--------------|
| Our Reference: | UNITS | 62422-2 |
| Your Reference | | MW01/0.5-0.6 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| ExchangeableCa | meq/100g | 30 |
| ExchangeableK | meq/100g | 0.44 |
| Exchangeable Mg | meq/100g | 1.2 |
| ExchangeableNa | meq/100g | 0.94 |
| Cation Exchange Capacity | meq/100g | 33 |
| ESP | % | 2.9 |

| 1 | Texture and Salinity | | | | | |
|---|--|-------|--------------------|--------------|--------------|--------------|
| | | | 00400.0 | CO 400 F | 00400.44 | 00400 40 |
| | Our Reference: | UNITS | 62422-2 | 62422-5 | 62422-11 | 62422-19 |
| | Your Reference | | MW01/0.5-0.6 | MW01/2.0-2.1 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| | Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| | Type of sample | | Soil | Soil | Soil | Soil |
| | Electrical Conductivity 1:5 soil:water | µS/cm | 310 | 620 | 80 | 240 |
| | Texture Value | | 10 | [NA] | [NA] | [NA] |
| | Texture | - | LOAM | [NA] | [NA] | [NA] |
| | ECe | dS/m | 3.0 | [NA] | [NA] | [NA] |
| | Class | - | SLIGHTLY SALINE | [NA] | [NA] | [NA] |

| Moisture | | | | | | |
|----------------|-------|--------------|--------------|--------------|--------------|--------------|
| Our Reference: | UNITS | 62422-2 | 62422-6 | 62422-10 | 62422-11 | 62422-19 |
| Your Reference | | MW01/0.5-0.6 | MW01/2.5-2.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Type of sample | | Soil | Soil | Soil | Soil | Soil |
| Date prepared | - | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 | 27/09/2011 |
| Date analysed | - | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 | 28/09/2011 |
| Moisture | % | 14 | 11 | 4.1 | 3.8 | 8.9 |

| Moisture | | |
|----------------|-------|------------|
| Our Reference: | UNITS | 62422-27 |
| Your Reference | | Dup02 |
| Date Sampled | | 19/09/2011 |
| Type of sample | | Soil |
| Date prepared | - | 27/09/2011 |
| Date analysed | - | 28/09/2011 |
| Moisture | % | 4.2 |

| Asb | estos ID - soils | | | | | |
|-----|------------------|-------|---|--|--|--|
| Ou | ur Reference: | UNITS | 62422-2 | 62422-10 | 62422-11 | 62422-19 |
| Yo | our Reference | | MW01/0.5-0.6 | MW02/0.5-0.6 | MW02/1.0-1.1 | MW03/0.5-0.6 |
| C | Date Sampled | | 19/09/2011 | 19/09/2011 | 19/09/2011 | 20/09/2011 |
| Ту | pe of sample | | Soil | Soil | Soil | Soil |
| D | ate analysed | - | 30/09/2011 | 30/09/2011 | 30/09/2011 | 30/09/2011 |
| Sam | ple mass tested | g | 30.21g | Approx 35g | Approx 35g | Approx 35g |
| Sam | nple Description | - | Brown fine- grained soil | Brown fine- grained soil | Brown fine- grained soil | Brown fine- grained soil |
| Asb | estos ID in soil | - | Chrysotile asbestos detected Amosite asbestos detected | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg | No asbestos found at reporting limit of 0.1g/kg |
| Tr | ace Analysis | - | Trace respirable fibres detected | No respirable fibres detected | No respirable fibres detected | No respirable fibres detected |

| Method ID | Methodology Summary |
|------------------------|--|
| Org-014 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. |
| Org-016 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. |
| Org-003 | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. |
| Org-012 subset | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. |
| Org-005 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. |
| Org-008 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's. |
| Org-006 | Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD. |
| Inorg-030 | Total Phenolics - determined colorimetrically following disitillation, based upon APHA 21st ED 5530 D. |
| Metals-020 ICP- AES | Determination of various metals by ICP-AES. |
| Metals-021 CV- AAS | Determination of Mercury by Cold Vapour AAS. |
| Inorg-001 | pH - Measured using pH meter and electrode in accordance with APHA 21st ED, 4500-H+. |
| Inorg-081 | Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA 21st ED, 4110 -B. |
| Metals-009 | Determination of exchangeable cations and cation exchange capacity in soil based on Rayment and Lyons 2011. |
| Inorg-002 | Conductivity and Salinity - measured using a conductivity cell and dedicated meter, in accordance with APHA 21st ED 2510 and Rayment & Higginson. |
| Inorg-008 | Moisture content determined by heating at 105 deg C for a minimum of 4 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. |

| QUALITY CONTROL UNITS PQL METHOD Blank Duplicate Sm# Duplicate results Spike Sm# Spike % Recovery VOCs in soil - - 27/09/2 62422-10 27/09/2011 27/09/2011 LCS-1 27/09/20 Date extracted - - 28/09/2 62422-10 28/09/2011 28/09/2011 LCS-1 28/09/20 Dichlorodifluoromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Dichlorodifluoromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Vinyl Chloride mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Bromomethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Bromomethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Chloroethane mg/kg 1 Org-014 <1 6242 | |
|--|------------|
| VOCs in soil Image: Construct of the sector of | .y |
| Date extracted - L 27/09/2 011 62422-10 28/09/2 011 27/09/2011 27/09/2011 LCS-1 27/09/2010 Date analysed - - 28/09/2 011 62422-10 28/09/2011 28/09/2011 LCS-1 28/09/2010 Dichlorodifluoromethane mg/kg 1 Org-014 <1 | |
| Date analysed - 28/09/2 011 62422-10 28/09/2011 28/09/2011 LCS-1 28/09/2012 Dichlorodifluoromethane mg/kg 1 Org-014 <1 | 2011 |
| $ \begin{array}{c c c c c c c c c c c c c c c c c c c $ | 2011 |
| Chloromethanemg/kg1Org-014<1 $62422-10$ <1 <1[NR][NR]Vinyl Chloridemg/kg1Org-014<1 | !] |
| Vinyl Chloride mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Bromomethane mg/kg 1 Org-014 <1 | ː] |
| Bromomethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Chloroethane mg/kg 1 Org-014 <1 | ː] |
| Chloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] Trichlorofluoromethane mg/kg 1 Org-014 <1 | ː] |
| Trichlorofluoromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] 1,1-Dichloroethene mg/kg 1 Org-014 <1 | [] |
| 1,1-Dichloroethene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |
| | ː] |
| trans-1,2-dichloroethene mg/kg 1 Urg-014 <1 62422-10 <1 <1 [NR] | [] |
| 1,1-dichloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 106% | % |
| cis-1,2-dichloroethene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | [] |
| bromochloromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | ː] |
| chloroform mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 98% | 6 |
| 2,2-dichloropropane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | ː] |
| 1,2-dichloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 93% | 6 |
| 1,1,1-trichloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 86% | 6 |
| 1,1-dichloropropene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | ː] |
| Cyclohexane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | ː] |
| carbon tetrachloride mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | !] |
| Benzene mg/kg 0.2 Org-014 <0.2 62422-10 <0.2 [NR] [NR] | !] |
| dibromomethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | ː] |
| 1,2-dichloropropane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |
| trichloroethene mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 92% | 6 |
| bromodichloromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 96% | 6 |
| trans-1,3- mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] dichloropropene <1 |] |
| cis-1,3-dichloropropene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | :] |
| 1,1,2-trichloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | :] |
| Toluene mg/kg 0.5 Org-014 <0.5 62422-10 <0.5 <0.5 [NR] [NR] | [] |
| 1,3-dichloropropane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | [] |
| dibromochloromethane mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 93% | 6 |
| 1,2-dibromoethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | [] |
| tetrachloroethene mg/kg 1 Org-014 <1 62422-10 <1 <1 LCS-1 95% | 6 |
| 1,1,1,2- tetrachloroethane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] |] |
| chlorobenzene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |
| Ethylbenzene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |
| bromoform mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | [] |
| m+p-xylene mg/kg 2 Org-014 <2 62422-10 <2 <2 [NR] [NR] | [] |
| styrene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |
| 1,1,2,2- mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] tetrachloroethane 1 Org-014 <1 |] |
| 0-Xylene mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] | [] |
| 1,2,3-trichloropropane mg/kg 1 Org-014 <1 62422-10 <1 <1 [NR] [NR] | [] |

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|---|-------|-----|---------|-------|---------------|----------------------------|-----------|---------------------|
| VOCs in soil | | | | | | Base II Duplicate II % RPD | | |
| isopropylbenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| bromobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| n-propyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 2-chlorotoluene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 4-chlorotoluene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,3,5-trimethyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| tert-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,2,4-trimethyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,3-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| sec-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,4-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 4-isopropyl toluene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,2-dichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| n-butyl benzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,2-dibromo-3- chloropropane | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,2,4-trichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| hexachlorobutadiene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| 1,2,3-trichlorobenzene | mg/kg | 1 | Org-014 | <1 | 62422-10 | <1 <1 | [NR] | [NR] |
| <i>Surrogate</i> Dibromofluorometha | % | | Org-014 | 97 | 62422-10 | 104 100 RPD: 4 | LCS-1 | 101% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | | Org-014 | 133 | 62422-10 | 134 116 RPD:14 | LCS-1 | 117% |
| Surrogate Toluene-d8 | % | | Org-014 | 106 | 62422-10 | 109 104 RPD:5 | LCS-1 | 104% |
| Surrogate 4- Bromofluorobenzene | % | | Org-014 | 100 | 62422-10 | 101 101 RPD:0 | LCS-1 | 101% |

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|---|---|---|--|---|---|--|---|---|
| | | | | | | | | Recovery |
| vTRH&BTEX in Soil | | | | | | Base II Duplicate II %RPD | | |
| Date extracted | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-1 | 27/09/2011 |
| Date analysed | - | | | 28/09/2 011 | 62422-10 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| vTRHC6 - C9 | mg/kg | 25 | Org-016 | <25 | 62422-10 | <25 <25 | LCS-1 | 102% |
| Benzene | mg/kg | 0.2 | Org-016 | <0.2 | 62422-10 | <0.2 <0.2 | LCS-1 | 94% |
| Toluene | mg/kg | 0.5 | Org-016 | <0.5 | 62422-10 | <0.5 <0.5 | LCS-1 | 110% |
| Ethylbenzene | mg/kg | 1 | Org-016 | <1 | 62422-10 | <1 <1 | LCS-1 | 102% |
| m+p-xylene | mg/kg | 2 | Org-016 | <2 | 62422-10 | <2 <2 | LCS-1 | 103% |
| o-Xylene | mg/kg | 1 | Org-016 | <1 | 62422-10 | <1 <1 | LCS-1 | 109% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | | Org-016 | 133 | 62422-10 | 134 127 RPD:5 | LCS-1 | 130% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| sTRH in Soil (C10-C36) | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date extracted | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-1 | 27/09/2011 |
| Date analysed | - | | | 28/09/2 011 | 62422-10 | 28/09/2011 28/09/2011 | LCS-1 | 28/09/2011 |
| TRHC 10 - C 14 | mg/kg | 50 | Org-003 | <50 | 62422-10 | <50 <50 | LCS-1 | 99% |
| TRHC 15 - C28 | mg/kg | 100 | Org-003 | <100 | 62422-10 | <100 <100 | LCS-1 | 98% |
| TRHC29 - C36 | mg/kg | 100 | Org-003 | <100 | 62422-10 | <100 <100 | LCS-1 | 92% |
| Surrogate o-Terphenyl | % | | Org-003 | 93 | 62422-10 | 91 91 RPD: 0 | LCS-1 | 93% |
| | | | | | | | | |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| QUALITY CONTROL PAHs in Soil | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results Base II Duplicate II %RPD | Spike Sm# | Spike % Recovery |
| QUALITYCONTROL PAHs in Soil Date extracted | UNITS | PQL | METHOD | Blank 27/09/2 | Duplicate Sm# | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 | Spike Sm# | Spike % Recovery 27/09/2011 |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed | UNITS - - | PQL | METHOD | Blank 27/09/2 011 28/09/2 | Duplicate Sm# 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 | Spike Sm# LCS-3 LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene | UNITS - - ma/kg | PQL 0.1 | METHOD Org-012 | Blank 27/09/2 011 28/09/2 011 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene | UNITS - mg/kg | PQL 0.1 | METHOD Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene | UNITS - mg/kg mg/kg | PQL 0.1 0.1 | METHOD Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 LCS-3 [NR] | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene | UNITS - mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 LCS-3 [NR] [NR] | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] [NR] |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene | UNITS - mg/kg mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 [NR] [NR] LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] [NR] 104% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Fluorene Phenanthrene | UNITS - mg/kg mg/kg mg/kg mg/kg mg/kg | PQL 0.1 0.1 0.1 0.1 0.1 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II % RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 [NR] [NR] LCS-3 LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] [NR] 104% 105% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 [NR] [NR] LCS-3 LCS-3 [NR] | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] 104% 105% [NR] |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II % RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <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 | Spike Sm# LCS-3 LCS-3 LCS-3 [NR] LCS-3 [NR] LCS-3 [NR] LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] 104% 105% [NR] 102% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <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 0.2 0.1 RPD: 67 0.2 0.1 RPD: 67 | Spike Sm# LCS-3 LCS-3 LCS-3 [NR] LCS-3 LCS-3 [NR] LCS-3 LCS-3 LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] 104% 105% [NR] 102% 1102% 110% |
| QUALITYCONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <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 <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 <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 <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 <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 <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 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II % RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.2 0.1 RPD: 67 0.2 0.1 RPD: 67 0.1 <0.1 | Spike Sm# LCS-3 LCS-3 [NR] [NR] LCS-3 [NR] LCS-3 [NR] LCS-3 [NR] | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] 104% 105% [NR] 102% 110% [NR] |
| QUALITY CONTROL PAHs in Soil Date extracted Date analysed Naphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)anthracene Chrysene | UNITS - 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 | METHOD Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset Org-012 subset | Blank 27/09/2 011 28/09/2 011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | Duplicate Sm# 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 62422-10 | Duplicate results Base II Duplicate II %RPD 27/09/2011 27/09/2011 28/09/2011 28/09/2011 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 0.1 RPD: 67 0.2 0.1 RPD: 67 0.1 <0.1 <0.1 <0.1 | Spike Sm# LCS-3 LCS-3 LCS-3 [NR] LCS-3 LCS-3 [NR] LCS-3 LCS-3 [NR] LCS-3 | Spike % Recovery 27/09/2011 28/09/2011 100% [NR] 104% 105% [NR] 102% 110% [NR] 102% 110% |

| Client Reference: 72628.00, Parramatta | | | | | | | | |
|--|-------|------|-------------------|----------------|---------------|----------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| PAHs in Soil | | | | | | Base II Duplicate II % RPD | | |
| Benzo(b+k)fluoranthene | mg/kg | 0.2 | Org-012 subset | <0.2 | 62422-10 | <0.2 <0.2 | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-012 subset | <0.05 | 62422-10 | 0.08 <0.05 | LCS-3 | 67% |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-012 subset | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate p-Terphenyl- d14 | % | | Org-012 subset | 107 | 62422-10 | 93 94 RPD:1 | LCS-3 | 101% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Organochlorine Pesticides in soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date extracted | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-5 | 27/09/2011 |
| Date analysed | - | | | 30/09/2 011 | 62422-10 | 01/10/2011 01/10/2011 | LCS-5 | 01/10/2011 |
| НСВ | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| alpha-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 112% |
| gamma-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| beta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 118% |
| Heptachlor | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 99% |
| delta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Aldrin | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 100% |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 108% |
| gamma-Chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| alpha-chlordane | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Endosulfan I | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| pp-DDE | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 114% |
| Dieldrin | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 106% |
| Endrin | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 104% |
| pp-DDD | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 130% |
| Endosulfan II | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| pp-DDT | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Endrin Aldehyde | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 105% |
| Methoxychlor | mg/kg | 0.1 | Org-005 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate TCLMX | % | | Org-005 | 87 | 62422-10 | 84 85 RPD:1 | LCS-5 | 93% |

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|---------------------------------|-------|-----|-----------------------|----------------|----------------|----------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Organophosphorus Pesticides | | | | | | Base II Duplicate II %RPD | | |
| Date extracted | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-5 | 27/09/2011 |
| Date analysed | - | | | 01/10/2 011 | 62422-10 | 01/10/2011 01/10/2011 | LCS-5 | 01/10/2011 |
| Diazinon | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Dimethoate | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Chlorpyriphos-methyl | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Ronnel | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Chlorpyriphos | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 109% |
| Fenitrothion | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 122% |
| Bromophos-ethyl | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Ethion | mg/kg | 0.1 | Org-008 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 114% |
| Surrogate TCLMX | % | | Org-008 | 87 | 62422-10 | 84 85 RPD:1 | LCS-5 | 92% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| PCBs in Soil | | | | | | Base II Duplicate II %RPD | | , |
| Date extracted | - | | | 27/09/2 011 | 62422-10 | 29/09/2011 29/09/2011 | LCS-5 | 27/09/2011 |
| Date analysed | - | | | 01/10/2 011 | 62422-10 | 01/10/2011 01/10/2011 | LCS-5 | 01/10/2011 |
| Arochlor 1016 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1221* | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1232 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1242 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1248 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Arochlor 1254 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | LCS-5 | 127% |
| Arochlor 1260 | mg/kg | 0.1 | Org-006 | <0.1 | 62422-10 | <0.1 <0.1 | [NR] | [NR] |
| Surrogate TCLMX | % | | Org-006 | 87 | 62422-10 | 84 85 RPD:1 | LCS-5 | 110% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Total Phenolics in Soil | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 29/09/2 011 | [NT] | [NT] | LCS-1 | 29/09/2011 |
| Date analysed | - | | | 30/09/2 011 | [NT] | [NT] | LCS-1 | 30/09/2011 |
| Total Phenolics (as Phenol) | mg/kg | 5 | Inorg-030 | ත් | [NT] | [NT] | LCS-1 | 96% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recoverv |
| Acid Extractable metals in soil | | | | | | Base II Duplicate II % RPD | | |
| Datedigested | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-1 | 27/09/2011 |
| Date analysed | - | | | 27/09/2 011 | 62422-10 | 27/09/2011 27/09/2011 | LCS-1 | 27/09/2011 |
| Arsenic | mg/kg | 4 | Metals-020 ICP-AES | <4 | 62422-10 | <4 <4 | LCS-1 | 100% |
| Cadmium | mg/kg | 0.5 | Metals-020 ICP-AES | <0.5 | 62422-10 | <0.5 <0.5 | LCS-1 | 107% |
| L | | 1 | | | | 1 | | |

| CI | ient | Reference: | |
|----|------|------------|--|
|----|------|------------|--|

| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|------------------------------------|--------------|------|-----------------------|----------------|---------------|----------------------------|-----------|---------------------|
| Acid Extractable metals in soil | | | | | | Base II Duplicate II % RPD | | |
| Chromium | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62422-10 | 3 4 RPD:29 | LCS-1 | 105% |
| Copper | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62422-10 | 3 4 RPD:29 | LCS-1 | 103% |
| Lead | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62422-10 | 4 4 RPD:0 | LCS-1 | 101% |
| Mercury | mg/kg | 0.1 | Metals-021 CV-AAS | <0.1 | 62422-10 | <0.1 <0.1 | LCS-1 | 111% |
| Nickel | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62422-10 | 3 2 RPD: 40 | LCS-1 | 105% |
| Zinc | mg/kg | 1 | Metals-020 ICP-AES | <1 | 62422-10 | 5 5 RPD:0 | LCS-1 | 102% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Miscellaneous Inorg - soil | | | | | | Base II Duplicate II % RPD | | |
| Date prepared | - | | | 28/09/2 011 | [NT] | [NT] | LCS-1 | 28/09/2011 |
| Date analysed | - | | | 28/09/2 011 | [NT] | [ТИ] | LCS-1 | 28/09/2011 |
| pH 1:5 soil:water | pH Units | | Inorg-001 | [NT] | [NT] | [NT] | LCS-1 | 103% |
| Chloride, Cl 1:5 soil:water | mg/kg | 2 | Inorg-081 | ~2 | [NT] | [ТИ] | LCS-1 | 100% |
| Sulphate, SO4 1:5 soil:water | mg/kg | 2 | Inorg-081 | ~2 | [NT] | [ТИ] | LCS-1 | 116% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| ESP/CEC | | | | | | Base II Duplicate II %RPD | | |
| Exchangeable Ca | meq/100 g | 0.01 | Metals-009 | <0.01 | [NT] | [TN] | LCS-1 | 97% |
| ExchangeableK | meq/100 g | 0.01 | Metals-009 | <0.01 | [NT] | [ТИ] | LCS-1 | 100% |
| ExchangeableMg | meq/100 g | 0.01 | Metals-009 | <0.01 | [NT] | [ТИ] | LCS-1 | 105% |
| ExchangeableNa | meq/100 g | 0.01 | Metals-009 | <0.01 | [NT] | [TM] | LCS-1 | 93% |
| Cation Exchange Capacity | meq/100 g | 1 | Metals-009 | <1.0 | [NT] | [NT] | [NR] | [NR] |
| ESP | % | 1 | Metals-009 | <1.0 | [NT] | [NT] | [NR] | [NR] |

| CI | ient | Refere | ence: |
|----|------|--------|-------|
| | | | |

| QUALITY CONTROLUNITSPQLMETHODBlankDuplicate Sm#Duplicate resultsSpike Sm#Spike Rm#Texture and SalinityElectrical Conductivity 1:5 soil:waterµS/cm1Inorg-002<1[NT][NT]LCS-1Texture ValueInorg-002[NT][NT][NT][NT][NR] | ike % covery 107% [NR] [NR] [NR] |
|--|---|
| Texture and Salinity Base II Duplicate II % RPD Electrical Conductivity 1:5 soil:water µS/cm 1 Inorg-002 <1 | 107% [NR] [NR] [NR] |
| Electrical Conductivity µS/cm 1 Inorg-002 <1 [NT] [NT] LCS-1 1:5 soil:water Inorg-002 [NT] [NT] [NT] [NR] Texture Value Inorg-002 [NT] [NT] [NR] | 107% [NR] [NR] [NR] |
| Texture Value Inorg-002 [NT] [NT] [NT] [NR] | [NR] [NR] [NR] |
| | [NR] [NR] |
| T FCP I dS/m I O I I INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI INTLI | [NR] |
| Class - INTI INTI INTI INTI | [] |
| QUALITY CONTROL UNITS PQL METHOD Blank | |
| Moisture | |
| Date prepared - 26/09/2 | |
| 011 | |
| Date analysed - 27/09/2 | |
| Moisture % 0.1 Inora-008 [NT] | |
| QUALITY CONTROL UNITS PQL METHOD Blank | |
| Asbestos ID - soils | |
| Date analysed - [NT] | |
| QUALITYCONTROL UNITS Dup. Sm# Duplicate Spike Sm# Spike % Recovery | |
| VOCs in soil Base + Duplicate + % RPD | |
| Date extracted - [NT] [NT] 62422-19 27/09/2011 | |
| Date analysed - [NT] [NT] 62422-19 28/09/2011 | |
| Dichlorodifluoromethane mg/kg [NT] [NT] [NR] [NR] | |
| Chloromethane mg/kg [NT] [NR] [NR] | |
| Vinyl Chloride mg/kg [NT] [NR] [NR] | |
| Bromomethane mg/kg [NT] [NR] [NR] | |
| Chloroethane mg/kg [NT] [NR] [NR] | |
| Trichlorofluoromethane mg/kg [NT] [NT] [NR] [NR] | |
| 1,1-Dichloroethene mg/kg [NT] [NT] [NR] [NR] | |
| trans-1,2-dichloroethene mg/kg [NT] [NT] [NR] [NR] | |
| 1,1-dichloroethane mg/kg [NT] [NT] 62422-19 121% | |
| cis-1,2-dichloroethene mg/kg [NT] [NR] [NR] | |
| bromochloromethane mg/kg [NT] [NT] [NR] [NR] | |
| chloroform mg/kg [NT] [NT] 62422-19 112% | |
| 2,2-dichloropropane mg/kg [NT] [NT] [NR] [NR] | |
| 1,2-dichloroethane mg/kg [NT] [NT] 62422-19 108% | |
| 1,1,1-trichloroethane mg/kg [NT] [NT] 62422-19 91% | |
| 1,1-dichloropropene mg/kg [NT] [NT] [NR] [NR] | |
| Cyclohexane mg/kg [NT] [NT] [NR] [NR] | |
| carbon tetrachloride mg/kg [NT] [NT] [NR] [NR] | |
| Benzene mg/kg [NT] [NR] [NR] | |
| dibromomethane mg/kg [NT] [NR] [NR] | |
| 1,2-dichloropropane mg/kg [NT] [NT] [NR] [NR] | |
| trichloroethene mg/kg [NT] [NT] 62422-19 103% | |
| bromodichloromethane mg/kg [NT] [NT] 62422-19 110% | |
| trans-1,3-dichloropropene mg/kg [NT] [NT] [NR] [NR] | |

| | | Client Referenc | e: 72628.00, Parrama | atta | |
|---|-------|------------------------|-------------------------|-----------|------------------|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| VOCs in soil | | | Base + Duplicate + %RPD | | |
| cis-1,3-dichloropropene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,1,2-trichloroethane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Toluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,3-dichloropropane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| dibromochloromethane | mg/kg | [NT] | [NT] | 62422-19 | 109% |
| 1,2-dibromoethane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| tetrachloroethene | mg/kg | [NT] | [NT] | 62422-19 | 105% |
| 1,1,1,2-tetrachloroethane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| chlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Ethylbenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| bromoform | mg/kg | [NT] | [NT] | [NR] | [NR] |
| m+p-xylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| styrene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,1,2,2-tetrachloroethane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| o-Xylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,3-trichloropropane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| isopropylbenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| bromobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| n-propyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 2-chlorotoluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 4-chlorotoluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,3,5-trimethyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| tert-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,4-trimethyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,3-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| sec-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,4-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 4-isopropyl toluene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2-dichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| n-butyl benzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2-dibromo-3- chloropropane | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,4-trichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| hexachlorobutadiene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| 1,2,3-trichlorobenzene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| <i>Surrogate</i> Dibromofluorometha | % | [NT] | [NT] | 62422-19 | 104% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | [NT] | [NT] | 62422-19 | 140% |
| Surrogate Toluene-d8 | % | [NT] | [NT] | 62422-19 | 104% |
| Surrogate 4- Bromofluorobenzene | % | [NT] | [NT] | 62422-19 | 101% |

| | | Client Referenc | e: 72628.00, Parrama | atta | |
|---|-------|------------------------|--------------------------|-----------|------------------|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| vTRH&BTEX in Soil | | | Base + Duplicate + % RPD | | |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 28/09/2011 |
| vTRHC6 - C9 | mg/kg | [NT] | [NT] | 62422-19 | 95% |
| Benzene | mg/kg | [NT] | [NT] | 62422-19 | 87% |
| Toluene | mg/kg | [NT] | [NT] | 62422-19 | 101% |
| Ethylbenzene | mg/kg | [NT] | [NT] | 62422-19 | 96% |
| m+p-xylene | mg/kg | [NT] | [NT] | 62422-19 | 96% |
| o-Xylene | mg/kg | [NT] | [NT] | 62422-19 | 103% |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | [NT] | [NT] | 62422-19 | 117% |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| sTRH in Soil (C10-C36) | | | Base + Duplicate + %RPD | | |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 28/09/2011 |
| TRHC 10 - C14 | mg/kg | [NT] | [NT] | 62422-19 | 100% |
| TRHC 15 - C28 | mg/kg | [NT] | [NT] | 62422-19 | 99% |
| TRHC29 - C36 | mg/kg | [NT] | [NT] | 62422-19 | 91% |
| Surrogate o-Terphenyl | % | [NT] | [NT] | 62422-19 | 92% |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| PAHs in Soil | | | Base + Duplicate + %RPD | | |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 28/09/2011 |
| Naphthalene | mg/kg | [NT] | [NT] | 62422-19 | 92% |
| Acenaphthylene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Acenaphthene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Fluorene | mg/kg | [NT] | [NT] | 62422-19 | 102% |
| Phenanthrene | mg/kg | [NT] | [NT] | 62422-19 | 96% |
| Anthracene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Fluoranthene | mg/kg | [NT] | [NT] | 62422-19 | 82% |
| Pyrene | mg/kg | [NT] | [NT] | 62422-19 | 90% |
| Benzo(a)anthracene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Chrysene | mg/kg | [NT] | [NT] | 62422-19 | 94% |
| Benzo(b+k)fluoranthene | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | [NT] | [NT] | 62422-19 | 111% |
| 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] |
| Surrogate p-Terphenyl- d14 | % | [NT] | [NT] | 62422-19 | 94% |

| | | Client Referenc | e: 72628.00, Parrama | atta | |
|---|-------|-----------------|--------------------------------------|-----------|------------------|
| QUALITY CONTROL Organochlorine Pesticides in soil | UNITS | Dup.Sm# | Duplicate Base + Duplicate + %RPD | Spike Sm# | Spike % Recovery |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 01/10/2011 |
| HCB | mg/kg | [NT] | [NT] | [NR] | [NR] |
| alpha-BHC | mg/kg | [NT] | [NT] | 62422-19 | 97% |
| gamma-BHC | mg/kg | [NT] | [NT] | [NR] | [NR] |
| beta-BHC | mg/kg | [NT] | [NT] | 62422-19 | 104% |
| Heptachlor | mg/kg | [NT] | [NT] | 62422-19 | 98% |
| delta-BHC | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Aldrin | mg/kg | [NT] | [NT] | 62422-19 | 87% |
| Heptachlor Epoxide | mg/kg | [NT] | [NT] | 62422-19 | 95% |
| 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] | 62422-19 | 100% |
| Dieldrin | mg/kg | [NT] | [NT] | 62422-19 | 93% |
| Endrin | mg/kg | [NT] | [NT] | 62422-19 | 93% |
| pp-DDD | mg/kg | [NT] | [NT] | 62422-19 | 116% |
| 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] | 62422-19 | 91% |
| Methoxychlor | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Surrogate TCLMX | % | [NT] | [NT] | 62422-19 | 84% |

| | | Client Referenc | e: 72628.00, Parrama | atta | |
|---------------------------------|-------|------------------------|-------------------------|-----------|------------------|
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| Organophosphorus Pesticides | | | Base + Duplicate + %RPD | | |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 01/10/2011 |
| Diazinon | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Dimethoate | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Chlorpyriphos-methyl | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Ronnel | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Chlorpyriphos | mg/kg | [NT] | [NT] | 62422-19 | 99% |
| Fenitrothion | mg/kg | [NT] | [NT] | 62422-19 | 109% |
| Bromophos-ethyl | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Ethion | mg/kg | [NT] | [NT] | 62422-19 | 104% |
| Surrogate TCLMX | % | [NT] | [NT] | 62422-19 | 84% |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| PCBs in Soil | | | Base + Duplicate + %RPD | | |
| Date extracted | - | [NT] | [NT] | 62422-19 | 27/09/2011 |
| Date analysed | - | [NT] | [NT] | 62422-19 | 01/10/2011 |
| Arochlor 1016 | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Arochlor 1221* | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Arochlor 1232 | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Arochlor 1242 | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Arochlor 1248 | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Arochlor 1254 | mg/kg | [NT] | [NT] | 62422-19 | 114% |
| Arochlor 1260 | mg/kg | [NT] | [NT] | [NR] | [NR] |
| Surrogate TCLMX | % | [NT] | [NT] | 62422-19 | 92% |
| QUALITYCONTROL | UNITS | Dup.Sm# | Duplicate | Spike Sm# | Spike % Recovery |
| Acid Extractable metals in soil | | | Base + Duplicate + %RPD | | |
| | | | | | |
| Date digested | - | [N1] | [N1] | 62422-19 | 27/09/2011 |
| Date analysed | - | [N1] | [N1] | 62422-19 | 27/09/2011 |
| Arsenic | mg/kg | [N1] | [N1] | 62422-19 | 95% |
| Cadmium | mg/kg | [N1] | [N1] | 62422-19 | 91% |
| Chromium | mg/kg | [NT] | [N1] | 62422-19 | 121% |
| Copper | mg/kg | [NT] | [NT] | 62422-19 | 115% |
| Lead | mg/kg | [NT] | [NT] | 62422-19 | 80% |
| Mercury | mg/kg | [NT] | [NT] | 62422-19 | 115% |
| Nickel | mg/kg | [NT] | [NT] | 62422-19 | 106% |
| Zinc | mg/kg | [NT] | [NT] | 62422-19 | 74% |
Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 30-40g of sample in its own container.

Sample 62422-2; Loose bundles of chrysotile and amosite asbestos identifed within the sample, and also embedded in several fragments of fibre cement (total weight 6.6041g). It is estimated that the fibre cement contains up to 30% asbestos fibres by weight. This calculates to 1.9812g of asbestos fibres, which in 30.21g of soil is 65.57g/kg (i.e. > reporting limit for the method of 0.1g/kg).

| Asbestos ID was analysed by Approved Identifier: | Alex Tam |
|---|----------|
| Asbestos ID was authorised by Approved Signatory: | Lulu Guo |

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

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. **LCS (Laboratory Control Sample)** : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Pty Ltd |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street, CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W - water | Container type | Heavy Metais | BTEX/ TPH | OCP/ OPP | PCB | PAH | Phenol | Asbestos | Textural Classification | Ha | ËC | Sulphate / Chloride | ЦSР | VOC |
|-----------------|-----------------|-----------|------------------|-----------------------|-------------------|-----------------|--------------|----------|----------|----------|----------|----------|----------------------------|----------|------------|------------------------|----------|----------|
| MW01 | 0.1-0.2 | | 19/9/11 | s | G/P | | | | | | | | | | | | | - |
| | 0.5-0.6 | 2 | 19/9/11 | s | G/P | \times | \times | \times | \times | \times | × | \times | × | × | \times | \times | \times | X |
| | 1.0-1.2 | 3 | 1 9/9/11 | S | G/P | | | | | | | | | | | | | |
| | 1.5-1.6 | 4 | 19/9/11 | s | G/P | | | | | | | | | | | | | |
| | 2.0-2.1 | 5 | 19/9/11 | s | G/P | | | | | | | | | Х | \times | | | |
| | 2.5-2.6 | 6 | 19/9/11 | s | G/P | X | \times | | | \times | | | | | | | | |
| | 3.0-3.1 | 7 | 19/9/11 | s | G/P | | | | | | | | | | | | | |
| | 4.0-4.1 | 8 | 19/9/11 | s | G/P | | | | | | | | | | | | | |
| MW02 | 0.0-0.1 | 9 | 19/9/11 | s | G/P | | | | | - | | | | | | | | |
| | 0.5-0.6 | 10 | 19/9/11 | s | G/P | \mathbf{X} | \times | \times | \times | \times | \times | Х | | | | | | \times |
| | 1.0-1.1 | 11 | 19/9/11 | S | G/P | \times | \times | Ķ | \times | \times | \times | \times | | \times | \times | | | |
| | 1.5-1.6 | 12 | 19/9/11 | S | G/P | | | | | | | | | | | | | |
| Lab Report No | | | | | | | | | | | | | Pho | ne: (02) | 9809 066 | 6 | | <u>'</u> |
| Send Results t | o: Dougias | Partner | s Address: | <u>_ 96 H</u> | ermitage | Road, V | Nest Ryd | e 2114 | | | | | / Fax | . (02 |) 9809 409 |)5 | | |
| Relinquished by | Kali Jaiji | Sigr | ned: | Ejen | + | Date & T | //چ : Time | 19/11 | R | eceived | By: | A | C | Date 8 | & Time: | | | |
| Relinquished by | : 7 | Sigr | ned: 🔶 🖓 | | | Date & 1 | îme: | | R | eceived | By: | 1 | | Date & | & Time: | - 10 ⁻ 514 | | |

| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Pty Ltd |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street, CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soil W - water | Container type | Heavy Metals | втех/ трн | оср/ Орр | РСВ | РАН | Phenol | Asbestos | Textural Classification | Hd | EC | Sulphate / Chloride | ESP | VOCS |
|--|--------------------------------------|-----------|------------------|-----------------------|-------------------|-----------------|---------------------|----------------------|--|----------|----------|----------|----------------------------|---------------|---|-------------------------------|-----|--|
| MW02 | 2.0-2.1 | 3 | 19/9/11 | s | G/P | | | | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,, | | | | | | | | | |
| | 2.5-2.6 | 14- | 19/9/11 | s | G/P | | | | | | | | | | | | | |
| | 3.0-3.1 | 15 | 19/9/11 | s | G/P | | | | | | | | | | 1997 Ali - I an an U ARA - A ine Ang ang ang ang ang ang ang ang ang ang a | | | |
| | 4.0-4.1 | 6) | 19/9/11 | s | G/P | | | | | | , , | | | | | | | |
| | 5.0-5.1 | 17 | 19/9/11 | s | G/P | | | | | | | | | ··· •··· | | | | |
| MW03 | 0.0-0.1 | 18 | 20/9/11 | S | G/P | | | | | | | | | | | | | ************************************** |
| | 0.5-0.6 | 19 | 20/9/11 | S | G/P | X | X | \times | \times | \times | \times | \times | | \times | \times | | | X |
| | 1.0-1.1 | 20 | 20/9/11 | s | G/P | | | | | | | | | | | | | |
| | 1.5-1.6 | 21 | 20/9/11 | s | G/P | | | | | | | | | | | | | |
| | 2.0-2.1 | 22 | 20/9/11 | s | G/P | | | | | | | | | | | | | |
| | 3.0-3.1 | 23 | 20/9/11 | s | G/P | | | | | | | | | | | | | |
| | 4.0-4.1 | 24 | 20/9/11 | s | G/P | | | | | | | | | | | | | |
| Lab Report N Send Results Relinquished b | o to: Dougla V: <i>LaL:</i> Su | as Partr | ners Addre | ess: | 96 Herm | iitage R Da | oad, We te & Tim | st Ryde 2 e: _2// | 114 57/11 | F | eceive | d By: | | Phone Fax: | e: (02) 9 (02) 9 Date & 1 | 809 0666 809 4095 Fime: | | |
| Relinquished b | y: / | 5 | Signed: | 19 | | Da | te & Tim | e: | | F | leceive | d By: | | <u> </u> | Date & 1 | lime: | | |

• . `

| Project Name: | Contamination Assessment – Parramatta | To: Envirolab Services Pty Ltd |
|----------------|---------------------------------------|--|
| Project No: | 72628.00 Sampler: Kate Sargent | 12 Ashley Street, CHATSWOOD NSW 2067 |
| Project Mgr: | PGMob. Phone: 0439 498 513 | Attn: Tania Notaras |
| Email: | kate.sargent@douglaspartners.com.au | Phone: 9910 6200 Fax: 9910 6201 |
| Date Required: | Standard Lab Quote No | Email: enquires@envirolabservices.com.au |

| Sample ID | Sample Depth | Lab ID | Sampling Date | S - soll W - water | Container type | Heavy Metals | втех/ трн | OCP/ OPP | PCB | РАН | Phenol | Asbestos | Textural Classification | Hq | EC | Sulphate / Chloride | ESP |
|-----------------|-----------------|-----------|------------------|-----------------------|-------------------|-----------------|--------------|----------|-----|----------|--------|----------|----------------------------|----------|----------|------------------------|--|
| MW03 | 5.0-5.1 | 25 | 20/9/11 | S | G/P | | | | | | | | | | | | |
| Dup01 | | 26 | 19/9/11 | S | G/P | | | | | | | | | | | | |
| Dup02 | | 27 | 19/9/11 | s | G/P | \times | \times | | | \times | | | | | | | |
| Dup03 | | 28 | 20/9/11 | S | G/P | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
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| | | | | | | | | | | | | | | | | | |
| Lab Report No | | <u> </u> | | | | | | | | | | <u>I</u> | Pho | ne: (02) | 9809 066 | <u>_</u> | |
| Send Results t | o: Douglas | Partne | rs Address: | <u>_9</u> 6 H | ermitage | e Road, ' | West Ryd | de 2114 | | | | | / / Fax | : (02) | 9809 409 | - | |
| Relinquished by | Lat Juya | ut Sig | ned: " | y wind | 1 | Date & | Time: | 1/9/11 | R | eceived | By: | Į. | | Date & | Time: | | |
| Relinquished by | : / | Sig | ned: | | | Date & | Time: | ·· | F | eceived | By: | /// | J | Date 8 | Time: | | |
| <u> </u> | | | | | | | · · | | | | | | | | | | ······································ |



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

CERTIFICATE OF ANALYSIS

62962

Client: Douglas Partners 96 Hermitage Rd West Ryde NSW 2114

Attention: Kate Sargent

Sample log in details:

| Your Reference: | 72628.00, Parramatta | | | | | | |
|---|----------------------|---|----------|--|--|--|--|
| No. of samples: | 4 waters | | | | | | |
| Date samples received / completed instructions received | 06/10/11 | / | 06/10/11 | | | | |

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:
 10/10/11
 /
 10/10/11

 Date of Preliminary Report:
 Not Issued
 Not Issued

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 Accredited for compliance with ISO/IEC 17025.

 Tests not covered by NATA are denoted with *.

Results Approved By:

-Mana Nancy Zhang Chemist

Gic

Giovanni Agosti Technical Manager

Jeremy Faircloth Chemist

Envirolab Reference: 62962 Revision No: R 00 Page 1 of 18

Client Reference: 72628.00, Parramatta

| VOCs in water | LINITS | 62962-1 | 62062-2 | 62062-3 |
|---------------------------|--------------|------------|-----------------|-----------------|
| Your Reference | | MW01 | 02902-2 MW02 | 02902-3 MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Date extracted | _ | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | _ | 10/10/2011 | 10/10/2011 | 10/10/2011 |
| Dichlorodifluoromethane | ug/l | <10 | ~10 | ~10 |
| Chloromothana | µg/∟ | <10 | <10 | <10 |
| Visul Chlorida | µg/∟ | <10 | <10 | <10 |
| | μg/L | <10 | <10 | <10 |
| Biomometriane | μg/L | <10 | <10 | <10 |
| | µg/L | <10 | <10 | <10 |
| Irichlorofluoromethane | µg/L | <10 | <10 | <10 |
| 1,1-Dichloroethene | µg/L | <1 | <1 | <1 |
| I rans-1,2-dichloroethene | µg/L | <1 | <1 | <1 |
| 1,1-dichloroethane | µg/L | <1 | <1 | <1 |
| Cis-1,2-dichloroethene | µg/L | <1 | <1 | <1 |
| Bromochloromethane | µg/L | <1 | <1 | <1 |
| Chloroform | µg/L | <1 | <1 | <1 |
| 2,2-dichloropropane | µg/L | <1 | <1 | <1 |
| 1,2-dichloroethane | µg/L | <1 | <1 | <1 |
| 1,1,1-trichloroethane | µg/L | <1 | <1 | <1 |
| 1,1-dichloropropene | µg/L | <1 | <1 | <1 |
| Cyclohexane | µg/L | <1 | <1 | <1 |
| Carbon tetrachloride | µg/L | <1 | <1 | <1 |
| Benzene | µg/L | <1 | <1 | <1 |
| Dibromomethane | µg/L | <1 | <1 | <1 |
| 1,2-dichloropropane | µg/L | <1 | <1 | <1 |
| Trichloroethene | µg/L | <1 | <1 | <1 |
| Bromodichloromethane | µg/L | <1 | <1 | <1 |
| trans-1,3-dichloropropene | µg/L | <1 | <1 | <1 |
| cis-1,3-dichloropropene | µg/L | <1 | <1 | <1 |
| 1,1,2-trichloroethane | µg/L | <1 | <1 | <1 |
| Toluene | µg/L | <1 | <1 | <1 |
| 1,3-dichloropropane | µg/L | <1 | <1 | <1 |
| Dibromochloromethane | µg/L | <1 | <1 | <1 |
| 1,2-dibromoethane | µg/L | <1 | <1 | <1 |
| Tetrachloroethene | µa/L | <1 | <1 | <1 |
| 1,1,1,2-tetrachloroethane | ua/L | <1 | <1 | <1 |
| Chlorobenzene | ua/L | <1 | <1 | <1 |
| Ethylbenzene | ua/l | <1 | <1 | <1 |
| Bromoform | ua/l | <1 | <1 | <1 |
| m+n-xvlene | ug/l | ~ | 2 | ~2 |
| Styrene | µ9/⊏ ua/l | ~1 | ~ | ~ |
| 1 1 2 2-tetrachloroethane | µ9/⊏ uc/l | -1 | ~1 | ~1 |
| | µ9/⊏ uo/l | _1 | ~1 | _1 |
| 1.2.3-trichloropropage | µ9/⊏ | -1 | -1 | ~1 |
| r,z,o-urchioropropane | µg/∟ | < I | < I | < I |

Client Reference:

| VOCs in water | | | | |
|--------------------------------|-------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 |
| Your Reference | | MW01 | MW02 | MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Isopropylbenzene | µg/L | <1 | <1 | <1 |
| Bromobenzene | µg/L | <1 | <1 | <1 |
| n-propyl benzene | µg/L | <1 | <1 | <1 |
| 2-chlorotoluene | µg/L | <1 | <1 | <1 |
| 4-chlorotoluene | µg/L | <1 | <1 | <1 |
| 1,3,5-trimethyl benzene | µg/L | <1 | <1 | <1 |
| Tert-butyl benzene | µg/L | <1 | <1 | <1 |
| 1,2,4-trimethyl benzene | µg/L | <1 | <1 | <1 |
| 1,3-dichlorobenzene | µg/L | <1 | <1 | <1 |
| Sec-butyl benzene | µg/L | <1 | <1 | <1 |
| 1,4-dichlorobenzene | µg/L | <1 | <1 | <1 |
| 4-isopropyl toluene | µg/L | <1 | <1 | <1 |
| 1,2-dichlorobenzene | µg/L | <1 | <1 | <1 |
| n-butyl benzene | µg/L | <1 | <1 | <1 |
| 1,2-dibromo-3-chloropropane | µg/L | <1 | <1 | <1 |
| 1,2,4-trichlorobenzene | µg/L | <1 | <1 | <1 |
| Hexachlorobutadiene | µg/L | <1 | <1 | <1 |
| 1,2,3-trichlorobenzene | µg/L | <1 | <1 | <1 |
| Surrogate Dibromofluoromethane | % | 108 | 108 | 108 |
| Surrogate toluene-d8 | % | 101 | 101 | 101 |
| Surrogate 4-BFB | % | 112 | 112 | 113 |

Client Reference: 72628.00, Parramatta

| _ | | | | | | |
|---|--------------------------------|-------|------------|------------|------------|------------|
| | vTRH & BTEX in Water | | | | | |
| | Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 | 62962-4 |
| | Your Reference | | MW01 | MW02 | MW03 | DUP01 |
| | Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| | Type of sample | | water | water | water | water |
| ľ | Date extracted | - | 07/10/2011 | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| | Date analysed | - | 10/10/2011 | 10/10/2011 | 10/10/2011 | 10/10/2011 |
| | TRHC6 - C9 | µg/L | <10 | <10 | <10 | <10 |
| | Benzene | µg/L | <1 | <1 | <1 | <1 |
| | Toluene | µg/L | <1 | <1 | <1 | <1 |
| | Ethylbenzene | µg/L | <1 | <1 | <1 | <1 |
| | m+p-xylene | µg/L | <2 | <2 | <2 | <2 |
| | o-xylene | µg/L | <1 | <1 | <1 | <1 |
| | Surrogate Dibromofluoromethane | % | 108 | 108 | 108 | 103 |
| | Surrogate toluene-d8 | % | 101 | 101 | 101 | 106 |
| | Surrogate 4-BFB | % | 112 | 112 | 113 | 97 |

Client Reference: 72628.00, Parramatta

| sTRH in Water (C10-C36) | | | | | |
|--------------------------------------|-------|------------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 | 62962-4 |
| Your Reference | | MW01 | MW02 | MW03 | DUP01 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water | water |
| Date extracted | - | 07/10/2011 | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | - | 10/10/2011 | 10/10/2011 | 10/10/2011 | 10/10/2011 |
| TRHC 10 - C14 | μg/L | <50 | <50 | <50 | <50 |
| TRHC 15 - C28 | μg/L | <100 | <100 | <100 | <100 |
| TRHC ₂₉ - C ₃₆ | μg/L | <100 | <100 | <100 | <100 |
| Surrogate o-Terphenyl | % | 101 | 106 | 102 | 78 |

Client Reference:

| PAHs in Water | | | | |
|---------------------------|-------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 |
| Your Reference | | MW01 | MW02 | MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Date extracted | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Naphthalene | µg/L | <1 | <1 | <1 |
| Acenaphthylene | µg/L | <1 | <1 | <1 |
| Acenaphthene | µg/L | <1 | <1 | <1 |
| Fluorene | µg/L | <1 | <1 | <1 |
| Phenanthrene | µg/L | <1 | <1 | <1 |
| Anthracene | µg/L | <1 | <1 | <1 |
| Fluoranthene | µg/L | <1 | <1 | <1 |
| Pyrene | µg/L | <1 | <1 | <1 |
| Benzo(a)anthracene | µg/L | <1 | <1 | <1 |
| Chrysene | µg/L | <1 | <1 | <1 |
| Benzo(b+k)fluoranthene | µg/L | <2 | <2 | <2 |
| Benzo(a)pyrene | µg/L | <1 | <1 | <1 |
| Indeno(1,2,3-c,d)pyrene | µg/L | <1 | <1 | <1 |
| Dibenzo(a,h)anthracene | µg/L | <1 | <1 | <1 |
| Benzo(g,h,i)perylene | µg/L | <1 | <1 | <1 |
| Surrogate p-Terphenyl-d14 | % | 119 | 121 | 120 |

Client Reference:

| OCP in water | | | | |
|---------------------|-------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 |
| Your Reference | | MW01 | MW02 | MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Date extracted | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| НСВ | μg/L | <0.2 | <0.2 | <0.2 |
| alpha-BHC | μg/L | <0.2 | <0.2 | <0.2 |
| gamma-BHC | μg/L | <0.2 | <0.2 | <0.2 |
| beta-BHC | μg/L | <0.2 | <0.2 | <0.2 |
| Heptachlor | μg/L | <0.2 | <0.2 | <0.2 |
| delta-BHC | μg/L | <0.2 | <0.2 | <0.2 |
| Aldrin | μg/L | <0.2 | <0.2 | <0.2 |
| Heptachlor Epoxide | µg/L | <0.2 | <0.2 | <0.2 |
| gamma-Chlordane | µg/L | <0.2 | <0.2 | <0.2 |
| alpha-Chlordane | µg/L | <0.2 | <0.2 | <0.2 |
| Endosulfan I | µg/L | <0.2 | <0.2 | <0.2 |
| pp-DDE | µg/L | <0.2 | <0.2 | <0.2 |
| Dieldrin | µg/L | <0.2 | <0.2 | <0.2 |
| Endrin | µg/L | <0.2 | <0.2 | <0.2 |
| pp-DDD | µg/L | <0.2 | <0.2 | <0.2 |
| Endosulfan II | µg/L | <0.2 | <0.2 | <0.2 |
| pp-DDT | µg/L | <0.2 | <0.2 | <0.2 |
| Endrin Aldehyde | μg/L | <0.2 | <0.2 | <0.2 |
| Endosulfan Sulphate | µg/L | <0.2 | <0.2 | <0.2 |
| Methoxychlor | µg/L | <0.2 | <0.2 | <0.2 |
| Surrogate TCLMX | % | 98 | 109 | 99 |

Client Reference: 72628.00, Parramatta

| PCBs in Water | | | | |
|-----------------|-------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 |
| Your Reference | | MW01 | MW02 | MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Date extracted | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Arochlor 1016 | µg/L | <2 | <2 | <2 |
| Arochlor 1221* | µg/L | <2 | <2 | <2 |
| Arochlor 1232 | µg/L | <2 | <2 | <2 |
| Arochlor 1242 | µg/L | <2 | <2 | <2 |
| Arochlor 1248 | µg/L | <2 | <2 | <2 |
| Arochlor 1254 | µg/L | <2 | <2 | <2 |
| Arochlor 1260 | µg/L | <2 | <2 | <2 |
| Surrogate TCLMX | % | 98 | 109 | 99 |

Client Reference: 72628.00, Parramatta

| HM in water - dissolved | | | | | |
|-------------------------|-------|------------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 | 62962-4 |
| Your Reference | | MW01 | MW02 | MW03 | DUP01 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water | water |
| Date prepared | - | 7/10/2011 | 7/10/2011 | 7/10/2011 | 7/10/2011 |
| Date analysed | - | 7/10/2011 | 7/10/2011 | 7/10/2011 | 7/10/2011 |
| Arsenic-Dissolved | µg/L | 2 | <1 | <1 | <1 |
| Cadmium-Dissolved | µg/L | <0.1 | <0.1 | <0.1 | <0.1 |
| Chromium-Dissolved | µg/L | 2 | 1 | 4 | <1 |
| Copper-Dissolved | µg/L | 4 | 3 | 2 | <1 |
| Lead-Dissolved | µg/L | <1 | <1 | <1 | <1 |
| Mercury-Dissolved | µg/L | 0.1 | <0.1 | <0.1 | <0.1 |
| Nickel-Dissolved | μg/L | 2 | 1 | 3 | <1 |
| Zinc-Dissolved | µg/L | 14 | 9 | 6 | 4 |

Client Reference: 720

| Miscellaneous Inorganics | | | | |
|--------------------------|---------|------------|------------|------------|
| Our Reference: | UNITS | 62962-1 | 62962-2 | 62962-3 |
| Your Reference | | MW01 | MW02 | MW03 |
| Date Sampled | | 05/10/2011 | 05/10/2011 | 05/10/2011 |
| Type of sample | | water | water | water |
| Date prepared | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Date analysed | - | 07/10/2011 | 07/10/2011 | 07/10/2011 |
| Hardness | mgCaCO3 | 130 | 110 | 140 |
| Coloium Dissoluted | , L | 24 | 77 | 10 |
| Calcium - Dissolved | mg/L | 24 | 1.1 | 18 |
| Magnesium - Dissolved | mg/L | 16 | 22 | 22 |

Client Reference: 72628.00, Parramatta

| MethodID | Methodology Summary |
|------------------------|---|
| Org-013 | Water samples are analysed directly by purge and trap GC-MS. |
| Org-016 | Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. |
| Org-003 | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. |
| Org-012 subset | Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. |
| 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-022 ICP-MS | Determination of various metals by ICP-MS. |
| Metals-021 CV- AAS | Determination of Mercury by Cold Vapour AAS. |
| Metals-020 ICP- AES | Determination of various metals by ICP-AES. |

Client Reference:

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|-------------------------------|-------|-----|---------|----------------|---------------|----------------------------|-----------|------------|
| | | | | | | | | Recovery |
| VOCs in water | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| Date analysed | - | | | 10/10/2 011 | [NT] | [NT] | LCS-W1 | 10/10/2011 |
| Dichlorodifluoromethane | µg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| Chloromethane | μg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| Vinyl Chloride | μg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| Bromomethane | µg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| Chloroethane | µg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| Trichlorofluoromethane | µg/L | 10 | Org-013 | <10 | [NT] | [NT] | [NR] | [NR] |
| 1,1-Dichloroethene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Trans-1,2- dichloroethene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,1-dichloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 108% |
| Cis-1,2-dichloroethene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Bromochloromethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Chloroform | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 114% |
| 2,2-dichloropropane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2-dichloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 111% |
| 1,1,1-trichloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 115% |
| 1,1-dichloropropene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Cyclohexane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Carbon tetrachloride | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Dibromomethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2-dichloropropane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Trichloroethene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 140% |
| Bromodichloromethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 106% |
| trans-1,3- dichloropropene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| cis-1,3-dichloropropene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,1,2-trichloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Toluene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,3-dichloropropane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Dibromochloromethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 99% |
| 1,2-dibromoethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Tetrachloroethene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | LCS-W1 | 112% |
| 1,1,1,2- tetrachloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Chlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Ethylbenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Bromoform | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| m+p-xylene | µg/L | 2 | Org-013 | ~2 | [NT] | [NT] | [NR] | [NR] |
| Styrene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,1,2,2- tetrachloroethane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| o-xylene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|-----------------------------------|-------|-----|---------|-------|---------------|----------------------------|-----------|---------------------|
| VOCs in water | | | | | | Base II Duplicate II % RPD | | |
| 1,2,3-trichloropropane | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Isopropylbenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Bromobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| n-propyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 2-chlorotoluene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 4-chlorotoluene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,3,5-trimethyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Tert-butyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2,4-trimethyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,3-dichlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Sec-butyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,4-dichlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 4-isopropyl toluene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2-dichlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| n-butyl benzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2-dibromo-3- chloropropane | µg/L | 1 | Org-013 | <1 | [NT] | [TM] | [NR] | [NR] |
| 1,2,4-trichlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Hexachlorobutadiene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| 1,2,3-trichlorobenzene | µg/L | 1 | Org-013 | <1 | [NT] | [NT] | [NR] | [NR] |
| Surrogate Dibromofluoromethane | % | | Org-013 | 96 | [NT] | [TM] | LCS-W1 | 100% |
| Surrogate toluene-d8 | % | | Org-013 | 98 | [NT] | [NT] | LCS-W1 | 99% |
| Surrogate 4-BFB | % | | Org-013 | 115 | [NT] | [NT] | LCS-W1 | 96% |

| Client Reference | |
|------------------|--|
|------------------|--|

| | UNITS | PQI | | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|--|---------|-----|-------------------|----------------|------------------|----------------------------|-----------|---------------------|
| | ci il c | | | Diam | Dupiloate citiii | | | Recovery |
| vTRH&BTEX in Water | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 06/10/2 011 | [NT] | [NT] | LCS-W1 | 06/10/2011 |
| Date analysed | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| TRHC6 - C9 | µg/L | 10 | Org-016 | <10 | [NT] | [NT] | LCS-W1 | 96% |
| Benzene | µg/L | 1 | Org-016 | <1 | [NT] | [NT] | LCS-W1 | 84% |
| Toluene | µg/L | 1 | Org-016 | <1 | [NT] | [NT] | LCS-W1 | 86% |
| Ethylbenzene | µg/L | 1 | Org-016 | <1 | [NT] | [NT] | LCS-W1 | 100% |
| m+p-xylene | µg/L | 2 | Org-016 | ~2 | [NT] | [NT] | LCS-W1 | 106% |
| o-xylene | µg/L | 1 | Org-016 | <1 | [NT] | [NT] | LCS-W1 | 103% |
| <i>Surrogate</i> Dibromofluoromethane | % | | Org-016 | 102 | [NT] | [NT] | LCS-W1 | 78% |
| Surrogate toluene-d8 | % | | Org-016 | 104 | [NT] | [NT] | LCS-W1 | 82% |
| Surrogate 4-BFB | % | | Org-016 | 93 | [NT] | [NT] | LCS-W1 | 94% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| sTRH in Water (C10- C36) | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date extracted | - | | | 07/10/2 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| | | | | 011 | | | | |
| Date analysed | - | | | 10/10/2 011 | [NT] | [NT] | LCS-W1 | 10/10/2011 |
| TRHC 10 - C14 | µg/L | 50 | Org-003 | <50 | [NT] | [NT] | LCS-W1 | 78% |
| TRHC 15 - C28 | µg/L | 100 | Org-003 | <100 | [NT] | [NT] | LCS-W1 | 102% |
| TRHC29 - C36 | µg/L | 100 | Org-003 | <100 | [NT] | [NT] | LCS-W1 | 93% |
| Surrogate o-Terphenyl | % | | Org-003 | 103 | [NT] | [NT] | LCS-W1 | 102% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| PAHs in Water | | | | | | Base II Duplicate II %RPD | | |
| Date extracted | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| Date analysed | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| Naphthalene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 87% |
| Acenaphthylene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | [NR] | [NR] |
| Acenaphthene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | [NR] | [NR] |
| Fluorene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 101% |
| Phenanthrene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 101% |
| Anthracene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | [NR] | [NR] |
| Fluoranthene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 97% |
| Pyrene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 103% |
| Benzo(a)anthracene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | [NR] | [NR] |

| Client Reference: | |
|-------------------|--|
|-------------------|--|

| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|-------------------------------|-------|-----|-------------------|----------------|---------------|----------------------------|-----------|---------------------|
| PAHs in Water | | | | | | Base II Duplicate II % RPD | | - |
| Chrysene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 107% |
| Benzo(b+k)fluoranthene | µg/L | 2 | Org-012 subset | ~2 | [NT] | [NT] | [NR] | [NR] |
| Benzo(a)pyrene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | LCS-W1 | 107% |
| Indeno(1,2,3-c,d)pyrene | µg/L | 1 | Org-012 subset | <1 | [NT] | [NT] | [NR] | [NR] |
| Dibenzo(a,h)anthracene | µg/L | 1 | Org-012 subset | <1 | [NT] | [ТИ] | [NR] | [NR] |
| Benzo(g,h,i)perylene | µg/L | 1 | Org-012 subset | <1 | [NT] | [ТИ] | [NR] | [NR] |
| Surrogate p-Terphenyl- d14 | % | | Org-012 subset | 105 | [NT] | [ТИ] | LCS-W1 | 113% |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| OCP in water | | | | | | Base II Duplicate II % RPD | | , |
| Date extracted | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| Date analysed | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 | 07/10/2011 |
| 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 | 109% |
| 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 | 120% |
| Heptachlor | µg/L | 0.2 | Org-005 | <0.2 | [NT] | [NT] | LCS-W1 | 108% |
| 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 | 111% |
| Heptachlor Epoxide | µg/L | 0.2 | Org-005 | <0.2 | [NT] | [NT] | LCS-W1 | 111% |
| 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 | 112% |
| Dieldrin | µg/L | 0.2 | Org-005 | <0.2 | INT | INT | LCS-W1 | 110% |
| Endrin | µg/L | 0.2 | Org-005 | <0.2 | INT | INT | LCS-W1 | 113% |
| pp-DDD | µg/L | 0.2 | Org-005 | <0.2 | [NT] | [NT] | LCS-W1 | 107% |
| 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 | 113% |
| Methoxychlor | µg/L | 0.2 | Org-005 | <0.2 | [NT] | [NT] | [NR] | [NR] |
| Surrogate TCLMX | % | | Org-005 | 92 | [NT] | [NT] | LCS-W1 | 99% |

| | | Clie | ent Referenc | e: 72 | 2628.00, Parra | matta | |
|-------------------------|-------|------|----------------------|----------------|----------------|----------------------------|-----------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# |
| PCBs in Water | | | | | | Base II Duplicate II % RPD | |
| Date extracted | - | | | 07/10/2 011 | [NT] | [TN] | LCS-W1 |
| Date analysed | - | | | 07/10/2 011 | [NT] | [NT] | LCS-W1 |
| Arochlor 1016 | µg/L | 2 | Org-006 | ~2 | [NT] | [NT] | [NR] |
| Arochlor 1221* | µg/L | 2 | Org-006 | ~2 | [NT] | [NT] | [NR] |
| Arochlor 1232 | µg/L | 2 | Org-006 | <2 | [NT] | [NT] | [NR] |
| Arochlor 1242 | µg/L | 2 | Org-006 | <2 | [NT] | [NT] | [NR] |
| Arochlor 1248 | µg/L | 2 | Org-006 | ~2 | [NT] | [NT] | [NR] |
| Arochlor 1254 | µg/L | 2 | Org-006 | ~2 | [NT] | [NT] | LCS-W1 |
| Arochlor 1260 | µg/L | 2 | Org-006 | ~2 | [NT] | [NT] | [NR] |
| Surrogate TCLMX | % | | Org-006 | 92 | [NT] | [NT] | LCS-W1 |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# |
| HM in water - dissolved | | | | | | Base II Duplicate II % RPD | |
| Date prepared | - | | | 7/10/20 11 | 62962-1 | 7/10/2011 7/10/2011 | LCS-W1 |
| Date analysed | - | | | 7/10/20 11 | 62962-1 | 7/10/2011 7/10/2011 | LCS-W1 |
| Arsenic-Dissolved | µg/L | 1 | Metals-022 ICP-MS | <1 | 62962-1 | 2 2 RPD:0 | LCS-W1 |
| Cadmium-Dissolved | µg/L | 0.1 | Metals-022 ICP-MS | <0.1 | 62962-1 | <0.1 <0.1 | LCS-W1 |
| Chromium-Dissolved | µg/L | 1 | Metals-022 ICP-MS | <1 | 62962-1 | 2 2 RPD:0 | LCS-W1 |
| Copper-Dissolved | µg/L | 1 | Metals-022 ICP-MS | <1 | 62962-1 | 4 4 RPD:0 | LCS-W1 |
| Lead-Dissolved | µg/L | 1 | Metals-022 ICP-MS | <1 | 62962-1 | <1 <1 | LCS-W1 |

Mercury-Dissolved

Nickel-Dissolved

Zinc-Dissolved

µg/L

µg/L

µg/L

0.1

1

1

Metals-021

CV-AAS

Metals-022

ICP-MS

Metals-022

ICP-MS

<0.1

<1

<1

62962-1

62962-1

62962-1

0.1 || 0.1 || RPD: 0

2||2||RPD:0

14||15||RPD:7

Spike % Recovery

07/10/2011

07/10/2011

[NR]

[NR]

[NR]

[NR]

[NR]

123% [NR]

140%

7/10/2011

7/10/2011

95%

94%

98%

90%

98%

120%

93%

92%

LCS-W1

LCS-W1

LCS-W1

Spike % Recovery

| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | | Spike Sm# | Spike % Recovery |
|--------------------------|---------------|------------|-----------------------|----------------|------------------|----------------------------|---------------------------|---------------|---------------------|
| Miscellaneous Inorganics | | | | | | Base II Duplicate II % RPD | ase II Duplicate II % RPD | | |
| Date prepared | - | | | 07/10/2 011 | 62962-1 | 07/10/2011 07/10/20 | 07/10/2011 07/10/2011 | | 07/10/2011 |
| Date analysed | - | | | 07/10/2 011 | 62962-1 | 07/10/2011 07/10/20 | 011 | LCS-1 | 07/10/2011 |
| Hardness | mgCaCO 3/L | 3 | | 3.0 | 62962-1 | 130 130 RPD:0 | | [NR] | [NR] |
| Calcium - Dissolved | mg/L | 0.5 | Metals-020 ICP-AES | <0.5 | 62962-1 | 24 25 RPD:4 | | LCS-1 | 95% |
| Magnesium - Dissolved | mg/L | 0.5 | Metals-020 ICP-AES | <0.5 | 62962-1 | 16 16 RPD:0 | | LCS-1 | 102% |
| QUALITYCONTROL | UNITS | S 1 | Dup.Sm# | | Duplicate | Spike Sm# | Spi | ke % Recovery | |
| HM in water - dissolved | | | | Base+I | Duplicate + %RPD | | | | |
| Date prepared | - | - [NT] | | [NT] | | 62962-2 | | 7/10/2011 | _ |
| Date analysed | - | | [NT] | [NT] | | 62962-2 | | 7/10/2011 | |
| Arsenic-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 91% | |
| Cadmium-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 91% | |
| Chromium-Dissolved | µg/L | | [NT] | [NT] | | 62962-2 | 62962-2 | | |
| Copper-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | 62962-2 | | |
| Lead-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 90% | |
| Mercury-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 112% | |
| Nickel-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 88% | |
| Zinc-Dissolved | µg/L | | [NT] | | [NT] | 62962-2 | | 84% | |
| QUALITYCONTROL | UNITS | 6 | Dup.Sm# | | Duplicate | Spike Sm# | Spi | ke % Recovery | |
| Miscellaneous Inorganics | | | | Base+I | Duplicate + %RPD | | | | |
| Date prepared | - | | [NT] | | [NT] | 62962-2 | | 07/10/2011 | |
| Date analysed | - | | [NT] | | [NT] | 62962-2 | | 07/10/2011 | |
| Hardness | mgCaC 3/L | ò | [NT] | | [NT] | [NR] | | [NR] | |
| Calcium - Dissolved | mg/L | | [NT] | | [NT] | 62962-2 | | 94% | |
| Magnesium - Dissolved | mg/L | | [NT] | | [NT] | 62962-2 | | 101% | |

Report Comments:

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

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

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample. Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

| Project Project Project Email:/ Date R | t Name: t No: t Mgr: <i>(a.e. Sarr</i> Required: | 1. .?. | 2628.0 2628.0 4 4 4 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 | ntta So. Si Mob. Pho spartners | Mase ampler: . one:S s.com.au Lab (| , <u>, , , , , , , , , , , , , , , , , , </u> | 2C/ & 5 0650 | 4 ?~~;,e.c. | <i></i> | · · · · · · · · · · · · · · · · · · · | ······ | T A E | o: E 1 ttn: T P mail: 1 | nvirola 2 Ashl ania N hone: tnotara | ib Serv ey Stre lotaras 02 991 is@en | vices eet, Cl 0 6200 virolal | natsw) Fax: pservi | ood NS 02 9910 ces.com. | 5W 20 6201 .au | 068 |
|--|--|---------------|---|---|---|---|--------------------|-------------------------|-------------------------|---------------------------------------|--------------------|-----------------|-------------------------------------|---|--|---------------------------------------|---------------------------|-------------------------------|----------------------|--|
| Sample ID | Sample Depth | Lab 1D | Sampling Date | Sample Type • water • Soil | Container type | TPU/BTEX | РАН | 000 | NB | 8 heary Mekels | VOCS | Anines Handress | alytes | | | | | Other | | Notes |
| MANOI | | 1 | 5/10/11 | W | GIP | \overline{X} | X | \times | X | X | \times | X | <u> </u> | <u> </u> | | | | <u> </u> | | ······································ |
| MWOZ | | 2 | 5/10/11 | W | GIP | \times | \times | $\left \times \right $ | $\left \times \right $ | \times | $\left X \right $ | \times | | | | | | | | |
| MNO3 | l | 3 | 's/10/11 | W | GIP | $ \times$ | $\left X \right $ | \boldsymbol{X} | \boldsymbol{X} | X | X | \times | | 1 | 1 | | | | | |
| Nip Ol | | <u> </u> | 5/10/11 | W | GIP | $ $ \ge | | | | \times | | | | | | † · | | | | |

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|-----------------|-------------|-----------|--------|---------------------|--|---------------|--------|--------|-------|-------------|----------|---|----------|---------------|------------|------|--------------|-------------------|---------------------------------|
| | | | - | | | | | | | | | ł | | | 1 | | | х. (| |
| | | | | | | | | | | | 1 | | | ł | 1 | | | | nviroisb Services |
| | | | | | <u>-</u> | ├ ───- | | | | | ļ | | | ļ | | | | ENVIROUNE | 12 Ashley St Manual NSW 2087 |
| | | | | | ĺ | | | | | |] | | | ł | 1 | | | | Ph; (02) 9910 6200 |
| | | | | | | | | | | _ | <u>†</u> | | | | | | | Job No. | 7 967 |
| | | | | | | | | | | | L | | | [| | | | | |
| | | | | | | | | | | | | | | | | | _ | Date Received | 6.10.1 |
| | | | | | | - | | | | | | | | | | | | Time Receiver: | 14:50 |
| | | | | | | | | | · | | | | | ļ | (| | | Received by: 4 | |
| | | | | | | | | | | | | | | <u> </u> | 1 | | + | Temp: Coll And | |
| | | | | | | | | | | | | | | | | _ | | Cooling: Icelling | Berken None |
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| сар керо | "t No | | ••••• | • • • • • • • • • • | | | | | | | | | | | | | Pho | ne: (02) 9809 | 0666 |
| Send Resi | ults to: Do | uglas | Partne | ers Ade | dress:9 | 6 Hern | nitage | Road, | West | Rvde | 2114 | | | | | | Fav | (02) 0900 4 | 005 |
| Relinquishe | ed by: | 2 | – Sig | ned | 10 | - A | | Date & | Time: | <u>Lin.</u> | 11. | | Receive | d By: | 0 1/ | | <u>1 an.</u> | (02) 9009 4 | 095 |
| Dollar av de he | | yeur | | | | | | | | | // | | | ч шу. ———— | <u>V.K</u> | role | with | | |
| rteiinguisne | ea by: v | | Sigi | ned: | proved by the second se | | C | ate & | Time: | | | | Received | d By: | | | | Date & Time: | |



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

CERTIFICATE OF ANALYSIS

63193

Client: Douglas Partners 96 Hermitage Rd West Ryde NSW 2114

Attention: Kate Graham

Sample log in details:

| Your Reference: | 72628, Parramatta | | | | | |
|---|-------------------|----------|--|--|--|--|
| No. of samples: | 2 soils | _ | | | | |
| Date samples received / completed instructions received | 11/10/11 / | 11/10/11 | | | | |

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:
 14/10/11
 / 14/10/11

 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.

Tests not covered by NATA are denoted with *.

Results Approved By:

Nick Sarlamis Inorganics Supervisor



Client Reference:

72628, Parramatta

| spocas | | | |
|----------------------------|-------------------------|------------|------------|
| Our Reference: | UNITS | 63193-1 | 63193-2 |
| Your Reference | | MW02/3-3.1 | MW01/4-4.1 |
| Type of sample | | Soil | Soil |
| Date prepared | - | 10/10/2011 | 10/10/2011 |
| Date analysed | - | 10/10/2011 | 10/10/2011 |
| рН ка | pH units | 6.3 | 6.6 |
| TAA pH 6.5 | moles H ⁺ /t | <5 | <5 |
| s-TAA pH 6.5 | %w/w S | <0.01 | <0.01 |
| pH ∝ | pH units | 7.5 | 6.8 |
| TPApH6.5 | moles H ⁺ /t | <5 | <5 |
| s-TPA pH 6.5 | %w/w S | <0.01 | <0.01 |
| TSA pH 6.5 | moles H ⁺ /t | <5 | <5 |
| s-TSA pH 6.5 | %w/w S | <0.01 | <0.01 |
| ANCE | %CaCO3 | 0.12 | 0.25 |
| a-ANCe | moles H ⁺ /t | 25 | 50 |
| s-ANCe | %w/w S | <0.05 | 0.08 |
| SKCI | %w/w S | <0.005 | 0.007 |
| Sp | %w/w | 0.007 | 0.04 |
| Spos | %w/w | 0.006 | 0.04 |
| a-Spos | moles H ⁺ /t | <5 | 22 |
| Саксі | %w/w | 0.04 | 0.08 |
| Сар | %w/w | 0.12 | 0.10 |
| Сал | %w/w | 0.073 | 0.016 |
| Мдксі | %w/w | 0.008 | 0.018 |
| Мgр | %w/w | 0.025 | 0.090 |
| MgA | %w/w | 0.017 | 0.071 |
| SRAS | %w/w | <0.005 | <0.005 |
| Sнсі | %w/w S | NT | NT |
| Snas | %w/w S | NT | NT |
| a-Snas | moles H ⁺ /t | NT | NT |
| s-Snas | %w/w S | NT | NT |
| a-Net Acidity | moles H ⁺ /t | <10 | <10 |
| Liming rate | kg CaCO3/t | <0.75 | <0.75 |
| a-Net Acidity without ANCE | moles H ⁺ /t | NA | NA |
| Liming rate without ANCE | kg CaCO₃/t | NA | NA |

Client Reference: 72628, Parramatta

| Method ID | Methodology Summary |
|-----------|--|
| Inorg-064 | sPOCAS determined using titrimetric and ICP-AES techniques. Based on Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004. |

| lient | Reference: |
|-------|-------------------|
| | |

| Client Reference: 72628, Parramatta | | | | | | | | |
|-------------------------------------|----------------------------|-------|-----------|----------------|---------------|----------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| sPOCAS | | | | | | Base II Duplicate II % RPD | | |
| Date prepared | - | | | 10/10/2 011 | [NT] | [NT] | LCS-1 | 10/10/2011 |
| Date analysed | - | | | 10/10/2 011 | [NT] | [NT] | LCS-1 | 10/10/2011 |
| рН ка | pH units | | Inorg-064 | 5.4 | [NT] | [NT] | LCS-1 | 102% |
| TAA pH 6.5 | moles H⁺/t | 5 | Inorg-064 | 45 | [NT] | [NT] | LCS-1 | 116% |
| s-TAA pH 6.5 | %w/w S | 0.01 | Inorg-064 | <0.01 | [NT] | [NT] | LCS-1 | 114% |
| pH ox | pH units | | Inorg-064 | 5.0 | [NT] | [NT] | LCS-1 | 121% |
| TPApH6.5 | moles H⁺/t | 5 | Inorg-064 | 45 | [NT] | [NT] | LCS-1 | 94% |
| s-TPA pH 6.5 | %w/w S | 0.01 | Inorg-064 | <0.01 | [NT] | [NT] | LCS-1 | 94% |
| TSA pH 6.5 | moles H⁺/t | 5 | Inorg-064 | 45 | [NT] | [NT] | LCS-1 | 90% |
| s-TSA pH 6.5 | %w/w S | 0.01 | Inorg-064 | <0.01 | [NT] | [NT] | LCS-1 | 90% |
| ANCE | % CaCO3 | 0.05 | Inorg-064 | <0.05 | [NT] | [NT] | [NR] | [NR] |
| a-ANCe | moles H⁺/t | 5 | Inorg-064 | న | [NT] | [NT] | [NR] | [NR] |
| s-ANCe | %w/w S | 0.05 | Inorg-064 | <0.05 | [NT] | [NT] | [NR] | [NR] |
| Skci | %w/w S | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 111% |
| Sp | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 102% |
| Spos | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 99% |
| a-Spos | moles H⁺/t | 5 | Inorg-064 | 45 | [NT] | [NT] | LCS-1 | 99% |
| Саксі | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 90% |
| Сар | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 81% |
| Сал | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | [NR] | [NR] |
| Мдксі | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 100% |
| Mgp | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | LCS-1 | 116% |
| Mga | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | [NR] | [NR] |
| SRAS | %w/w | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | [NR] | [NR] |
| Sнсі | %w/w S | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | [NR] | [NR] |
| Snas | %w/w S | 0.005 | Inorg-064 | <0.005 | [NT] | [NT] | [NR] | [NR] |
| a-Snas | moles H ⁺ /t | 5 | Inorg-064 | ත් | [NT] | [NT] | [NR] | [NR] |
| s-Snas | %w/w S | 0.01 | Inorg-064 | <0.01 | [NT] | [NT] | [NR] | [NR] |
| a-Net Acidity | moles H ⁺ /t | 10 | Inorg-064 | <10 | [NT] | [NT] | LCS-1 | 93% |
| Liming rate | kg CaCO3 /t | 0.75 | Inorg-064 | <0.75 | [NT] | [NT] | LCS-1 | 100% |

Envirolab Reference: 63193 Revision No: R 00

Client Reference:

72628, Parramatta

| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|-------------------------------|-------------------|------|-----------|-------|---------------|---------------------------|-----------|---------------------|
| sPOCAS | | | | | | Base II Duplicate II %RPD | | |
| a-Net Acidity without ANCE | moles H⁺/t | 10 | Inorg-064 | <10 | [NT] | [NT] | [NR] | [NR] |
| Liming rate without ANCE | kg CaCO3 /t | 0.75 | Inorg-064 | <0.75 | [NT] | [NT] | [NR] | [NR] |

Report Comments:

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

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

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples. **Duplicate**: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.

Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist. LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample. Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable. Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

| Project Name: | Parramatta 72628 Sampler KER EG | To: E |
|--------------------------|---------------------------------------|--------|
| Project Mgr: | Kade a tama @ dog los parties com all | Attn: |
| Email: Date Required: | 24k Lab Quote No. | Email: |

To: Envirolab Services

12 Ashley Street, Chatswood NSW 2068

Attn: Tania Notaras

Phone: 02 9910 6200 Fax: 02 9910 6201

Email: tnotaras@envirolabservices.com.au

| | | | | | Sample Type | | | | | | | Analyte | S | | | | |
|---|------------------|---------------------|-----------|------------------|-----------------------|-------------------|----|-----------|-----------|-----------|--------|---------|--------------|-------------------|------|-----|--|
| | Sampl e ID | Sampl e Depth | Lab ID | Sampling Date | S - soil W - water | Container type | | spocas | | | | | | | | | Notes |
| 1 | MW02 | 13-3.1 | | | | | | | | | | | | | | | |
| 2 | MWO | 11-4 | . \ | | | | | | | | | | | | | | |
| | | /_ | | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | | | | |
| | | | | | | <u>+</u> | | | | | | | | | | | Envirolab Services |
| ļ | | | | | | | | | | | | | | | | | Chetswood NSW 2067 Ph: (02) 9810 5200 |
| | | | | | | | | | | | | | | | | | JOD NO: 6.3193. |
| | | | | | | | | | | | | | | | | | Date Received: 11/10/2011 |
| | | | | | | | | | | | | | | | | | Received by: Juk Linu. |
| | | | | | | | | | | | + | | | - | | | Temp: Cool/Ambient |
| | | | | | | | | | | 1 | | | - | | | | Security Inteo/Broken/None |
| | l | | • | † | | + | | | | | | | | | | | |
| Γ | ah Repor | IL | <u>II</u> | <u></u> | <u>I</u> | 1 1 | | | | | | | ų | - | Phon | ne: | (02) 9809 0666 |
| | Send Res | ults to: D | ouala | s Parti | ners | Address: | 96 | Hermitage | Road, W | /est Ryde | e 2114 | | | | Fax: | .((| 02) 9809 4095 |
| | Relinquishe | ed by: | 2P | <u> </u> | Signed: | KP | | ŭ | Date & Ti | me: \Óo | muli | o f | Received By: | 3 m lite . | | Da | ite & Time: 11/10/2011 15.25 |
| | Relinquishe | ed by: | | S | ligned: | | | D | ate & Tir | ne: | | R | eceived By: | | | Dat | te & Time: |

Page
$$\frac{1}{2}$$
 of $\frac{1}{2}$



ANALYTICAL REPORT

| - CLIENT DETAILS | | LABORATORY DETA | ILS | |
|-------------------|-------------------------------------|-----------------------|--|---|
| Contact | Kate Sargent | Manager | Huong Crawford | |
| Client Address | DOUGLAS PARTNERS PTY LTD | Laboratory Address | SGS Alexandria Environmental Unit 16, 33 Maddox St Alexandria NSW 2015 | |
| Telephone | 02 9809 0666 | Telephone | +61 2 8594 0400 | |
| Facsimile | 02 9809 4095 | Facsimile | +61 2 8594 0499 | |
| Email | kate.sargent@douglaspartners.com.au | Email | au.environmental.sydney@sgs.com | |
| Project | 72628.00 - Contamination Assesment | SGS Reference | SE102202 R0 | |
| Order Number | (Not specified) | Report Number | 0000009000 | |
| Samples | 1 | Date Reported | 06 Oct 2011 | |
| | | Date Received | 28 Sep 2011 | , |

COMMENTS .

Whilst SGS laboratories conform to ISO:17025 standards, results of analysis in this report fall outside of the current scope of NATA accreditation

SIGNATORIES _

Dong Liang Inorganics Metals Team Leader

Member _____

Ly Kim Ha Organics Supervisor

- Amorz

Huong Crawford Laboratory Manager

Tueway

Jue Wang Organic Chemist

Alexandria NSW 2015 Alexandria NSW 2015 Australia Australia

t +61 2 8594 0400 f +61 2 8594 0499

www.au.sgs.com



ANALYTICAL REPORT

Sample Number SE102202.001

0.1

mg/kg

<0.1

| | Sa S Sa | mple Matrix ample Date mple Name | Soil 22 Sep 2011 DUP04 |
|---|---------------|--|------------------------------|
| Parameter | Units | LOR | |
| VOC's in Soil Method: AN433/AN434 Monocyclic Aromatic Hydrocarbons | | | |
| Benzene | mg/kg | 0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 |
| m/p-xylene | ma/ka | 0.2 | <0.2 |

Oxygenated Compounds

|--|

Surrogates

o-xylene

| Dibromofluoromethane (Surrogate) | % | - | 68 |
|-----------------------------------|---|---|-----|
| d4-1,2-dichloroethane (Surrogate) | % | - | 94 |
| d8-toluene (Surrogate) | % | - | 103 |
| Bromofluorobenzene (Surrogate) | % | - | 99 |
| | | | |

Totals

| Total Xylenes | mg/kg | 0.3 | <0.3 |
|---------------|-------|-----|------|
| Total BTEX | mg/kg | - | 0 |

Volatile Petroleum Hydrocarbons in Soil Method: AN433/AN434

| TRH C6-C9 | mg/kg | 20 | <20 |
|-----------|-------|----|-----|
| | | | |

Surrogates

| Trifluorotoluene (Surrogate) | % | - | 126 |
|-----------------------------------|---|---|-----|
| Dibromofluoromethane (Surrogate) | % | - | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - |
| d8-toluene (Surrogate) | % | - | - |
| Bromofluorobenzene (Surrogate) | % | - | - |

TRH (Total Recoverable Hydrocarbons) in Soil Method: AN403

| TRH C10-C14 | mg/kg | 20 | <20 |
|-------------|-------|----|-----|
| TRH C15-C28 | mg/kg | 50 | <50 |
| TRH C29-C36 | mg/kg | 50 | <50 |
| | | | - |

| Surrogates | | | |
|-----------------|---|---|---|
| TRH (Surrogate) | % | - | - |

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: AN420

| Naphthalene | mg/kg | 0.1 | 0.2 |
|------------------------|-------|-----|------|
| 2-methylnaphthalene | mg/kg | 0.1 | 0.3 |
| 1-methylnaphthalene | mg/kg | 0.1 | 0.3 |
| 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 | 0.3 |
| 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)fluoranthene | mg/kg | 0.1 | <0.1 |
| Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 |
| Benzo(a)pyrene | mg/kg | 0.1 | <0.1 |
| Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 |
| Dibenzo(a&h)anthracene | ma/ka | 0.1 | <0.1 |



ANALYTICAL REPORT

| | Sam; Sar Sa Sa | SE102202.001 Soil 22 Sep 2011 DUP04 | |
|---|-------------------------|--|-------|
| Parameter | Units | LOR | |
| PAH (Polynuclear Aromatic Hydrocarbons) in Soil | Method: AN42 |) (continu | ied) |
| Benzo(ghi)perylene | mg/kg | 0.1 | <0.1 |
| Total PAH | mg/kg | 1.75 | <1.8↑ |

Surrogates

| d5-nitrobenzene (Surrogate) | % | - | 75 |
|------------------------------|---|---|----|
| 2-fluorobiphenyl (Surrogate) | % | - | 81 |
| d14-p-terphenyl (Surrogate) | % | - | 82 |

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: AN040/AN320

| Arsenic, As | mg/kg | 3 | <3 |
|--------------|-------|-----|-----|
| Cadmium, Cd | mg/kg | 0.3 | 0.5 |
| Chromium, Cr | mg/kg | 0.3 | 120 |
| Copper, Cu | mg/kg | 0.5 | 29 |
| Lead, Pb | mg/kg | 1 | 6 |
| Nickel, Ni | mg/kg | 0.5 | 110 |
| Zinc, Zn | mg/kg | 0.5 | 78 |
| | | | |

Mercury in Soil Method: AN312

| Mercury | mg/kg | 0.05 | <0.05 |
|---------|-------|------|-------|
| | | | |

Moisture Content Method: AN234

| % Moisture | % | 0.5 | 7.5 |
|------------|---|-----|-----|
| | | | |



QC SUMMARY

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

Mercury in Soil Method: ME-(AU)-[ENV]AN312

| Parameter | QC | Units | LOR | MB | DUP %RPD | LCS | MS | MSD %RPD |
|-----------|-----------|-------|------|-------|----------|------------|-----------|----------|
| | Reference | | | | | %Recovery | %Recovery | |
| Mercury | LB006209 | mg/kg | 0.05 | <0.05 | 0 - 5% | 103 - 107% | 93% | 5% |

Moisture Content Method: ME-(AU)-[ENV]AN234

| Parameter | QC | Units | LOR | DUP %RPD | |
|------------|-----------|-------|-----|----------|--|
| | Reference | | | | |
| % Moisture | LB006230 | % | 0.5 | 0 - 3% | |

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

| Parameter | QC | Units | LOR | MB | LCS |
|------------------------|-----------|-------|------|------|-----------|
| | Reference | | | | %Recovery |
| Naphthalene | LB006152 | mg/kg | 0.1 | <0.1 | 101% |
| 2-methylnaphthalene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| 1-methylnaphthalene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Acenaphthylene | LB006152 | mg/kg | 0.1 | <0.1 | 109% |
| Acenaphthene | LB006152 | mg/kg | 0.1 | <0.1 | 116% |
| Fluorene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Phenanthrene | LB006152 | mg/kg | 0.1 | <0.1 | 117% |
| Anthracene | LB006152 | mg/kg | 0.1 | <0.1 | 118% |
| Fluoranthene | LB006152 | mg/kg | 0.1 | <0.1 | 113% |
| Pyrene | LB006152 | mg/kg | 0.1 | <0.1 | 118% |
| Benzo(a)anthracene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Chrysene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Benzo(b)fluoranthene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Benzo(k)fluoranthene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Benzo(a)pyrene | LB006152 | mg/kg | 0.1 | <0.1 | 118% |
| Indeno(1,2,3-cd)pyrene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Dibenzo(a&h)anthracene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Benzo(ghi)perylene | LB006152 | mg/kg | 0.1 | <0.1 | NA |
| Total PAH | LB006152 | mg/kg | 1.75 | <1.8 | NA |

Surrogates

| Parameter | QC | Units | LOR | MB | LCS |
|------------------------------|-----------|-------|-----|------|-----------|
| | Reference | | | | %Recovery |
| d5-nitrobenzene (Surrogate) | LB006152 | % | - | 119% | 116% |
| 2-fluorobiphenyl (Surrogate) | LB006152 | % | - | 111% | 112% |
| d14-p-terphenyl (Surrogate) | LB006152 | % | - | 116% | 121% |

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|--------------|-----------------|-------|-----|------|----------|------------------|-----------------|
| Arsenic, As | LB006209 | mg/kg | 3 | <3 | 0 - 13% | 98% | 66 - 70% |
| Cadmium, Cd | LB006209 | mg/kg | 0.3 | <0.3 | 101% | 98 - 99% | 84% |
| Chromium, Cr | LB006209 | mg/kg | 0.3 | <0.3 | 2 - 3% | 99% | 73 - 77% |
| Copper, Cu | LB006209 | mg/kg | 0.5 | <0.5 | 1 - 2% | 99 - 101% | 82% |
| Lead, Pb | LB006209 | mg/kg | 1 | <1 | 2 - 8% | 98 - 99% | 75% |
| Nickel, Ni | LB006209 | mg/kg | 0.5 | <0.5 | 3 - 18% | 100 - 102% | 80% |
| Zinc, Zn | LB006209 | mg/kg | 0.5 | <0.5 | 36% | 101 - 102% | 82% |



MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

| Parameter | QC | Units | LOR | MB | DUP %RPD | LCS | MS |
|-------------|-----------|-------|-----|-----|----------|-----------|-----------|
| | Reference | | | | | %Recovery | %Recovery |
| TRH C10-C14 | LB006152 | mg/kg | 20 | <20 | 6% | 80% | NA |
| TRH C15-C28 | LB006152 | mg/kg | 50 | <50 | 0% | 80% | NA |
| TRH C29-C36 | LB006152 | mg/kg | 50 | <50 | 0% | 73% | NA |

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons Parame<u>ter</u> Units LOR MB LCS QC eference Recover Recover Benzene LB006148 mg/kg 0.1 <0.1 79% 94% Toluene LB006148 mg/kg 0.1 <0.1 88% 93% Ethylbenzene LB006148 mg/kg 0.1 <0.1 79% 93% LB006148 0.2 <0.2 81% 94% m/p-xylene mg/kg LB006148 o-xylene mg/kg 0.1 <0.1 84% 93%

| Oxygenated Compounds | | | | | |
|--------------------------------|-----------|-------|-----|------|-----------|
| Parameter | QC | Units | LOR | MB | LCS |
| | Reference | | | | %Recovery |
| MtBE (Methyl-tert-butyl ether) | LB006148 | mg/kg | 0.1 | <0.1 | NA |

Surrogates

| Parameter | QC | Units | LOR | MB | DUP %RPD | LCS | MS |
|-----------------------------------|-----------|-------|-----|------|----------|-----------|-----------|
| | Reference | | | | | %Recovery | %Recovery |
| Dibromofluoromethane (Surrogate) | LB006148 | % | - | 84% | 4% | 86% | 74% |
| d4-1,2-dichloroethane (Surrogate) | LB006148 | % | - | 86% | 0% | 93% | 96% |
| d8-toluene (Surrogate) | LB006148 | % | - | 105% | 1% | 105% | 101% |
| Bromofluorobenzene (Surrogate) | LB006148 | % | - | 98% | 1% | 97% | 101% |

Totals

| Parameter | QC | Units | LOR | MB | LCS | MS |
|---------------|-----------|-------|-----|------|-----------|-----------|
| | Reference | | | | %Recovery | %Recovery |
| Total Xylenes | LB006148 | mg/kg | 0.3 | <0.3 | NA | NA |
| Total BTEX | LB006148 | mg/kg | - | 0 | NA | NA |

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433/AN434

| Parameter | QC | Units | LOR | MB | DUP %RPD | LCS | MS |
|-----------|-----------|-------|-----|-----|----------|-----------|-----------|
| | Reference | | | | | %Recovery | %Recovery |
| TRH C6-C9 | LB006148 | mg/kg | 20 | <20 | 0% | 113% | 108% |

Surrogates

| Parameter | QC | Units | LOR | MB | DUP %RPD | LCS | MS |
|------------------------------|-----------|-------|-----|------|----------|-----------|-----------|
| | Reference | | | | | %Recovery | %Recovery |
| Trifluorotoluene (Surrogate) | LB006148 | % | - | 116% | 4% | 97% | 84% |



METHOD SUMMARY

| METHOD | |
|-------------|---|
| - METHOD | METHODOLOGY SUMMARY |
| AN040 | A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by ASS or ICP as per USEPA Method 200.8. |
| AN088 | Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700. |
| AN234 | The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water. |
| AN312 | Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500 |
| AN403 | Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36. |
| AN403 | Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with diffential polarity of the elluent solvents. |
| AN403 | The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependant on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B. |
| AN420 | (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D). |
| AN433/AN434 | VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260. |


FOOTNOTES .

- Insufficient sample for analysis. IS
- LNR Sample listed, but not received. This analysis is not covered by the scope of accreditation.
- ۸ Performed by outside laboratory.
- Limit of Reporting LOR
- Raised or Lowered Limit of Reporting 1↓

Samples analysed as received. Solid samples expressed on a dry weight basis.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf

This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.

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- QFL QC result is below the lower tolerance
- QC result is above the upper tolerance The sample was not analysed for this analyte
- NVL Not Validated

QFH



STATEMENT OF QA/QC PERFORMANCE AGAINST DATA QUALITY OBJECTIVES

SE102202 R0

| CLIENT DETAILS | | LABORATORY DETAIL | S |
|------------------------------|--|----------------------------------|--|
| Contact Client Address | Kate Sargent DOUGLAS PARTNERS PTY LTD | Manager Laboratory Address | Huong Crawford SGS Alexandria Environmental Unit 16, 33 Maddox St Alexandria NSW 2015 |
| Telephone | 02 9809 0666 | Telephone | +61 2 8594 0400 |
| Facsimile | 02 9809 4095 | Facsimile | +61 2 8594 0499 |
| Email | kate.sargent@douglaspartners.com.au | Email | au.environmental.sydney@sgs.com |
| Project | 72628.00 - Contamination Assesment | SGS Reference | SE102202 R0 |
| Order Number | (Not specified) | Report Number | 0000009001 |
| Samples | 1 | Date Reported | 06 Oct 2011 |

COMMENTS

All the laboratory data for each environmental matrix was compared to the SGS Environmental Services' stated data quality objectives (DQO).

Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the chain of custody document and was supplied by the client. This QA/QC statement must be read in conjunction with the referenced analytical report. The statement and the analytical report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

| Duplicate | Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) | 2 Items |
|-----------|---|---------|
| MS | Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) | 4 Items |

| - SAMPLE SUMMARY | | | | |
|--|------------|---------------------------------|----------|--|
| Sample counts by matrix | 1 Soil | Type of documentation received | COC | |
| Date documentation received | 28/9/2011 | Samples received in good order | Yes | |
| Samples received without headspace | Yes | Sample temperature upon receipt | 2.8°C | |
| Sample container provider | Other Lab | Turnaround time requested | Standard | |
| Samples received in correct containers | Yes | Sufficient sample for analysis | Yes | |
| Sample cooling method | Ice Bricks | Samples clearly labelled | Yes | |
| Complete documentation received | Yes | | | |
| · | | | | |

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HOLDING TIME SUMMARY

- HOLDING TIMES -

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field sampling guide for containers and holding time" (Ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

The extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and Analysis dates are shown in Green when within suggested criteria and in **Bold** with an appended dagger symbol and Red⁺ when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

| Sample Name | Sample Number | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|--------------------------------|--------------------------------------|-------------------|----------------------|--------------|----------------|-------------|--------------|-------------|
| Mercury in Soil Method: ME- | (AU)-[ENV]AN312 | | | | | | | |
| DUP04 | SE102202.001 | LB006209 | 22 Sep 2011 | 28 Sep 2011 | 20 Oct 2011 | 30 Sep 2011 | 20 Oct 2011 | 05 Oct 2011 |
| | | | | | | | | |
| Moisture Content Method: M | IE-(AU)-[ENV]AN234 | | | | | | | |
| DUP04 | SE102202.001 | LB006230 | 22 Sep 2011 | 28 Sep 2011 | 06 Oct 2011 | 01 Oct 2011 | 06 Oct 2011 | 04 Oct 2011 |
| | · | | | · | · | · | · | |
| PAH (Polynuclear Aromatic Hy | drocarbons) in Soil Method: | ME-(AU)-[ENV]AN | 1420 | | | | | |
| DUP04 | SE102202.001 | LB006152 | 22 Sep 2011 | 28 Sep 2011 | 06 Oct 2011 | 30 Sep 2011 | 09 Nov 2011 | 04 Oct 2011 |
| | | | 1 | 1 | 1 | | 1 | 1 |
| Total Recoverable Metals in Sc | bil by ICPOES from EPA 200.8 | B Digest (SYDNEY) | Method: ME-(AU)-[ENV | JAN040/AN320 | | | | |
| DUP04 | SE102202.001 | LB006209 | 22 Sep 2011 | 28 Sep 2011 | 20 Mar 2012 | 30 Sep 2011 | 20 Mar 2012 | 06 Oct 2011 |
| | | | | | | | | |
| TRH (Total Recoverable Hydro | carbons) in Soil Method: M | E-(AU)-[ENV]AN40 | 3 | | | | | |
| DUP04 | SE102202.001 | LB006152 | 22 Sep 2011 | 28 Sep 2011 | 06 Oct 2011 | 30 Sep 2011 | 09 Nov 2011 | 04 Oct 2011 |
| | | | | | | 1 | | 1 |
| | | | | | | | | |
| VOC's in Soil Method: ME-(A | AU)-[ENV]AN433/AN434 | | | | | | | |
| VOC's in Soil Method: ME-(A | AU)-[ENV]AN433/AN434 SE102202.001 | LB006148 | 22 Sep 2011 | 28 Sep 2011 | 06 Oct 2011 | 30 Sep 2011 | 09 Nov 2011 | 04 Oct 2011 |

| DUP04 | SE102202.001 | LB006148 | 22 Sep 2011 | 28 Sep 2011 | 06 Oct 2011 | 30 Sep 2011 | 09 Nov 2011 | 04 Oct 2011 |
|-------|--------------|----------|-------------|-------------|-------------|-------------|-------------|-------------|



SURROGATES

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
|--|-------------|---------------|-------|-----------|------------|
| PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420 | | | | | |
| 2-fluorobiphenyl (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 81 |
| d14-p-terphenyl (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 82 |
| d5-nitrobenzene (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 75 |
| VOC's In Soll Method: ME-(AU)-[ENV]AN433/AN434 | | | | | |
| Bromofluorobenzene (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 99 |
| d4-1,2-dichloroethane (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 94 |
| d8-toluene (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 103 |
| Dibromofluoromethane (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 68 |
| Volatile Petroleum Hydrocarbons in Soli Method: ME-(AU)-[ENV]AN433/AN434 | | | | | |
| Trifluorotoluene (Surrogate) | DUP04 | SE102202.001 | % | 60 - 130% | 126 |



METHOD BLANKS

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, which is typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| | | Control | BLK MB |
|--|-------|---------|--------|
| Parameter | Units | LOR | |
| Mercury in Soil Method: ME-(AU)-[ENV]AN312 LB006209.001 | | | |
| Mercury | mg/kg | 0.05 | <0.05 |
| LB006209.026 | | | |
| Mercury | mg/kg | 0.05 | <0.05 |
| | | | , |

PAH (Polynuclear Aromatic Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN420

LB006152.001 0.1 Naphthalene mg/kg <0.1 0 1 <0.1 2-methylnaphthalene mg/kg 0 1 <0.1 1-methylnaphthalene 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(a)pyrene mg/kg 0.1 <0.1 Indeno(1,2,3-cd)pyrene mg/kg 0.1 <0.1 Dibenzo(a&h)anthracene mg/kg 0.1 < 0.1 Benzo(ghi)perylene ma/ka Total PAH 1.75 <1.8 mg/kg Surrogates

| d5-nitrobenzene (Surrogate) | % | - | 119 |
|------------------------------|---|---|-----|
| 2-fluorobiphenyl (Surrogate) | % | - | 111 |
| d14-p-terphenyl (Surrogate) | % | - | 116 |

Total Recoverable Metals in Soll by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

| Arsenic, As | mg/kg | 3 | <3 |
|--------------|-------|-----|------|
| Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | <0.3 |
| Copper, Cu | mg/kg | 0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | <0.5 |
| LB006209.025 | | | |
| Arsenic, As | mg/kg | 3 | <3 |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| Chromium, Cr | mg/kg | 0.3 | <0.3 |
| Copper, Cu | mg/kg | 0.5 | <0.5 |
| Lead, Pb | mg/kg | 1 | <1 |
| Nickel, Ni | mg/kg | 0.5 | <0.5 |
| Zinc, Zn | mg/kg | 0.5 | <0.5 |
| | | | |

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403 LB006152.001

| TRH C10-C14 | mg/kg | 20 | <20 |
|--------------|-------|----|-----|
| TRH C15-C28 | mg/kg | 50 | <50 |
| TRH C29-C36 | mg/kg | 50 | <50 |
| LB006152.025 | | | |
| TRH C10-C14 | mg/kg | 20 | <20 |
| TRH C15-C28 | mg/kg | 50 | <50 |



METHOD BLANKS

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, which is typically 2.5 times the statistically determined method detection limit (MDL).

Result is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| | | Control | BLK MB |
|--|----------|---------|--------|
| Parameter | Units | LOR | |
| Continued TRH (Total Recoverable Hydrocarbons) In Soli Method: ME-(AU)-[EI LB006152.025 | NVJAN403 | | |
| TRH C29-C36 | mg/kg | 50 | <50 |
| VOC's In Soll Method: ME-(AU)-[ENV]AN433/AN434 LB006148.001 Monocyclic Aromatic Hydrocarbons | | | |
| Benzene | mg/kg | 0.1 | <0.1 |
| Toluene | mg/kg | 0.1 | <0.1 |
| Ethylbenzene | mg/kg | 0.1 | <0.1 |
| m/p-xylene | mg/kg | 0.2 | <0.2 |
| o-xylene | mg/kg | 0.1 | <0.1 |
| Oxygenated Compounds | | | |
| MtBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 |
| Surrogates | ~ | | 84 |
| Dibromofluoromethane (Surrogate) | % | | 86 |
| d4-1,2-dichloroethane (Surrogate) | % | - | 105 |
| d8-toluene (Surrogate) | % | - | 09 |
| Bromotluorobenzene (Surrogate) | % | - | 90 |
| l otais | | | _ |
| Total BTEX | mg/kg | - | 0 |
| Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433/AN434 LB006148.001 | | | |

| TRH C6-C9 | mg/kg | 20 | <20 |
|------------|-------|----|-----|
| | | | |
| Surrogates | | | |

| Trifluorotoluene (Surrogate) | % | - | 116 |
|------------------------------|---|---|-----|
| | | | |



DUPLICATES

Duplicates are calculated as relative percent difference (RPD) using the formula RPD = | OriginalResult - ReplicateResult | x 100 / Mean The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula: MaxAllowableDifference = 100 x StatisticalDetectionLimit / Mean + LimitingRepeatability Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| | Sample Name | | | SE1021 | | |
|---|-------------|-----|-----------------|------------------|------------|-------|
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |
| Moisture Content Method: ME-(AU)-[ENV]AN234 LB006230.011 | | | | | | |
| % Moisture | % | 0.5 | 3.1 | 3.0 | 46 | 3 |

| | Sample Name | | | SE102201.0 | | |
|--|-------------|-----|-----------------|------------------|------------|-------|
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |
| Mercury in Soil Method: ME-(AU)-[ENV]AN312 | | | | | | |

LB006209.015

| Mercury | mg/kg | 0.05 | NVL | 0.87 | 36 | 5 |
|---------|-------|------|-----|------|----|---|
| | | | | | | |

Total Recoverable Metals In Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

LB006209.014

| Arsenic, As | mg/kg | 3 | NVL | 9 | 64 | 13 |
|--------------|-------|-----|-----|-----|----|------|
| Cadmium, Cd | mg/kg | 0.3 | NVL | 0.3 | 78 | 101† |
| Chromium, Cr | mg/kg | 0.3 | NVL | 11 | 33 | 2 |
| Copper, Cu | mg/kg | 0.5 | NVL | 92 | 31 | 10 |
| Lead, Pb | mg/kg | 1 | NVL | 300 | 30 | 2 |
| Nickel, Ni | mg/kg | 0.5 | NVL | 8.2 | 36 | 18 |
| Zinc, Zn | mg/kg | 0.5 | NVL | 560 | 30 | 36† |

RPD failed acceptance criteria due to sample heterogeneity.

RPD failed acceptance criteria due to sample heterogeneity.

| | Sample Name | | | SE1022 | | |
|---|-------------|-----|-----------------|------------------|------------|-------|
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |
| Molsture Content Method: ME-(AU)-[ENV]AN234 LB006230.021 | | | | | | |
| % Moisture | % | 0.5 | 7.5 | 7.5 | 37 | 0 |

| | Sample Name | | | SE102249.007 | 7-DUP | |
|---|-------------|-----|-----------------|------------------|------------|-------|
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |
| TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403 LB006152.024 | | | | | | |

| TRH C10-C14 | mg/kg | 20 | 440 | 410 | 35 | 6 |
|-------------|-------|----|-----|-----|-----|---|
| TRH C15-C28 | mg/kg | 50 | <50 | <50 | 200 | 0 |
| TRH C29-C36 | mg/kg | 50 | <50 | <50 | 200 | 0 |

| 38 | inple Name | | 3E102257.001 | -DOP | |
|-----------------|------------|-----------------|------------------|------------|-------|
| Parameter Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

LB006148.024 Surrogates

| - 5 | | | 2 | to |
|-----|--|----|---|----|
| | | чч | | |
| | | ~ | | |
| | | | | |

| Dibromofluoromethane (Surrogate) | % | - | 82 | 79.0 | 50 | 4 |
|-----------------------------------|---|---|-----|-------|----|---|
| d4-1,2-dichloroethane (Surrogate) | % | - | 92 | 92.0 | 50 | 0 |
| d8-toluene (Surrogate) | % | - | 104 | 103.0 | 50 | 1 |
| Bromofluorobenzene (Surrogate) | % | - | 95 | 94.0 | 50 | 1 |
| | | | | | | |



DUPLICATES

Duplicates are calculated as relative percent difference (RPD) using the formula RPD = | OriginalResult - ReplicateResult | x 100 / Mean The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula: MaxAllowableDifference = 100 x StatisticalDetectionLimit / Mean + LimitingRepeatability Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| | Sample Name | | | SE1022 | | |
|--|-------------|------------|-----------------|------------------|------------|-------|
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |
| Volatile Petroleum Hydrocarbons in Soli Method: ME-(AU)-[ENV]AN433/AN434 LB006148.024 | | | | | | |
| TRH C6-C9 | mg/kg | 20 | <20 | <20 | 200 | 0 |
| Surrogates | | | | | | |
| Trifluorotoluene (Surrogate) | % | - | 99.0 | 95 | 30 | 4 |
| | | | | | | |
| | Sa | ample Name | | SE1022 | 76.009-DUP | |
| Parameter | Units | LOR | Original Result | Duplicate Result | Criteria % | RPD % |

Mercury in Soil Method: ME-(AU)-[ENV]AN312

LB006209.029

| Mercury | mg/kg | 0.05 | 0.03633895473294 | <0.05 | 165 | 0 |
|---------|-------|------|------------------|-------|-----|---|
| | | | | | | |

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

LB006209.028

| Arsenic, As | mg/kg | 3 | 0.880120581890592 | <3 | 200 | 0 |
|--------------|-------|-----|-------------------|------|-----|---|
| Cadmium, Cd | mg/kg | 0.3 | 0.100022401681509 | <0.3 | 200 | 0 |
| Chromium, Cr | mg/kg | 0.3 | 7.28524807788041 | 7.5 | 34 | 3 |
| Copper, Cu | mg/kg | 0.5 | 5.24298910337961 | 5.3 | 39 | 1 |
| Lead, Pb | mg/kg | 1 | 6.07561258919188 | 6 | 47 | 4 |
| Nickel, Ni | mg/kg | 0.5 | 2.31395265224847 | 2.4 | 51 | 3 |
| Zinc, Zn | mg/kg | 0.5 | 7.7383704850932 | 7.6 | 37 | 2 |

| Parameter Units LOR Original Result Duplicate Result Criteri | Criteria % RPD % |
|--|------------------|

Mercury in Soil Method: ME-(AU)-[ENV]AN312 LB006209.032

| Mercury | mg/kg | 0.05 | 0.0409170403587443 | <0.05 | 151 | 0 |
|---------|-------|------|--------------------|-------|-----|---|

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

LB006209.032

| Arsenic, As | mg/kg | 3 | 0.612738930023985 | <3 | 200 | 0 |
|--------------|-------|-----|--------------------|------|-----|---|
| Cadmium, Cd | mg/kg | 0.3 | 0.0878261945979767 | <0.3 | 200 | 0 |
| Chromium, Cr | mg/kg | 0.3 | 6.86414933778287 | 7.1 | 34 | 3 |
| Copper, Cu | mg/kg | 0.5 | 5.40976556470956 | 5.5 | 39 | 2 |
| Lead, Pb | mg/kg | 1 | 4.85046928772551 | 5 | 50 | 8 |
| Nickel, Ni | mg/kg | 0.5 | 2.45449258525393 | 2.4 | 51 | 3 |
| Zinc, Zn | mg/kg | 0.5 | 8.82359745541766 | 9.2 | 36 | 5 |



LABORATORY CONTROL STANDARDS

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report.

Recovery is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| | Cont | rol | | LCS | STD | |
|---|---------------------------------|-------|--------|-----------------|------------|------------|
| Parameter | Units | LOR | Result | Expected Result | Criteria % | Recovery % |
| Mercury in Soil Method: ME-(AU)-[ENV]AN312 LB006209.002 | | | | | | |
| Mercury | mg/kg | 0.05 | 0.21 | 0.2 | 70 - 130 | 107 |
| LB006209.027 | | | | | | |
| Mercury | mg/kg | 0.05 | 0.21 | 0.2 | 70 - 130 | 103 |
| PAH (Polynuclear Aromatic Hydrocarbons) In Soil Method: ME-(AU)-[ENV]A LB006152.002 | N420 | 0.1 | 24 | 2 27 | 60 140 | 101 |
| Naphthalene | mg/kg | 0.1 | 3.4 | 3.37 | 60 140 | 101 |
| Acenaphthylene | mg/kg | 0.1 | 3.7 | 3.37 | 60 - 140 | 109 |
| Acenaphtnene | mg/kg | 0.1 | 3.9 | 3.37 | 60 - 140 | 117 |
| Anthracene | mg/kg | 0.1 | 4.0 | 3.37 | 60 - 140 | 118 |
| | mg/kg | 0.1 | 3.8 | 3.37 | 60 - 140 | 113 |
| Pyrene | ma/ka | 0.1 | 4.0 | 3.37 | 60 - 140 | 118 |
| Benzo(a)pyrene | mg/kg | 0.1 | 4.0 | 3.37 | 60 - 140 | 118 |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogate) | % | - | 116 | 100 | 60 - 140 | 116 |
| 2-fluorobiphenyl (Surrogate) | % | - | 112 | 100 | 60 - 140 | 112 |
| d14-p-terphenyl (Surrogate) | % | - | 121 | 100 | 60 - 140 | 121 |
| I otal Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNE) LB006209.002 | r) method: ME-(AU)-[ENV]AN040// | AN320 | | | | |
| Arsenic, As | mg/kg | 3 | 49 | 50 | 80 - 120 | 98 |
| Cadmium, Cd | mg/kg | 0.3 | 50 | 50 | 80 - 120 | 99 |
| Chromium, Cr | mg/kg | 0.3 | 49 | 50 | 80 - 120 | 99 |
| Copper, Cu | mg/kg | 0.5 | 50 | 50 | 80 - 120 | 101 |
| Lead, Pb | mg/kg | 1 | 49 | 50 | 80 - 120 | 99 |
| Nickel, Ni | mg/kg | 0.5 | 51 | 50 | 80 - 120 | 102 |

LB006209.026

Zinc, Zn

| Arsenic, As | mg/kg | 3 | 49 | 50 | 80 - 120 | 98 |
|--------------|-------|-----|----|----|----------|-----|
| Cadmium, Cd | mg/kg | 0.3 | 49 | 50 | 80 - 120 | 98 |
| Chromium, Cr | mg/kg | 0.3 | 49 | 50 | 80 - 120 | 99 |
| Copper, Cu | mg/kg | 0.5 | 50 | 50 | 80 - 120 | 99 |
| Lead, Pb | mg/kg | 1 | 49 | 50 | 80 - 120 | 98 |
| Nickel, Ni | mg/kg | 0.5 | 50 | 50 | 80 - 120 | 100 |
| Zinc, Zn | mg/kg | 0.5 | 51 | 50 | 80 - 120 | 101 |
| | | | | | | |

0.5

51

mg/kg

50

80 - 120

102

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

LB006152.002

| TRH C10-C14 | mg/kg | 20 | 32 | 40 | 60 - 140 | 80 |
|--|-------|----|-----|----|----------|----|
| TRH C15-C28 | mg/kg | 50 | <50 | 40 | 60 - 140 | 80 |
| TRH C29-C36 | mg/kg | 50 | <50 | 40 | 60 - 140 | 73 |
| LB006152.026 | | | | | | |
| | | | | | | |
| TRH C10-C14 | mg/kg | 20 | 32 | 40 | 60 - 140 | 80 |
| TRH C15-C28 | mg/kg | 50 | <50 | 40 | 60 - 140 | 80 |
| TRH C29-C36 | mg/kg | 50 | <50 | 40 | 60 - 140 | 73 |
| VOC's in Soil Method: ME-(AU)-TENVIAN433/AN434 | | | | | | |

LB006148.002



LABORATORY CONTROL STANDARDS

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report.

Recovery is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria.

| Control LCS STD | | | | | |
|-----------------|---------------|--|--|--|---|
| Units | LOR | Result | Expected Result | Criteria % | Recovery % |
| | | | | | |
| mg/kg | 0.1 | 1.8 | 2.27 | 60 - 140 | 79 |
| mg/kg | 0.1 | 2.0 | 2.27 | 60 - 140 | 88 |
| mg/kg | 0.1 | 1.8 | 2.27 | 60 - 140 | 79 |
| mg/kg | 0.2 | 3.7 | 4.54 | 60 - 140 | 81 |
| mg/kg | 0.1 | 1.9 | 2.27 | 60 - 140 | 84 |
| | | | | | |
| % | - | 86.0 | 100 | 60 - 140 | 86 |
| % | - | 93.0 | 100 | 60 - 140 | 93 |
| % | - | 105.0 | 100 | 60 - 140 | 105 |
| % | - | 97.0 | 100 | 60 - 140 | 97 |
| | | | · · · · · · · · · · · · · · · · · · · | | |
| mg/kg | 20 | 26 | 23 | 60 - 140 | 113 |
| | Cont Units | Control Units LOR mg/kg 0.1 % - % - % - % - % - % - % - % - % - mg/kg 20 | Control Units LOR Result mg/kg 0.1 1.8 mg/kg 0.1 2.0 mg/kg 0.1 1.8 mg/kg 0.1 1.8 mg/kg 0.2 3.7 mg/kg 0.1 1.9 % - 86.0 % - 93.0 % - 93.0 % - 97.0 mg/kg 20 26 | Control LOR Result Expected Result mg/kg 0.1 1.8 2.27 mg/kg 0.1 2.0 2.27 mg/kg 0.1 1.8 2.27 mg/kg 0.1 1.8 2.27 mg/kg 0.1 1.9 1.00 % - 93.0 100 % - 97.0 100 % - 97.0 100 mg/kg 20 26 23 | Control LCS STD Units LOR Result Expected Result Criteria % mg/kg 0.1 1.8 2.27 60 - 140 mg/kg 0.1 2.0 2.27 60 - 140 mg/kg 0.1 1.8 2.27 60 - 140 mg/kg 0.1 1.8 2.27 60 - 140 mg/kg 0.1 1.9 2.27 60 - 140 mg/kg 0.1 1.9 2.27 60 - 140 mg/kg 0.1 1.9 2.27 60 - 140 % - 93.0 100 60 - 140 % - 93.0 100 60 - 140 % - 97.0 100 60 - 140 % - 97.0 100 60 - 140 % - 97.0 100 60 - 140 % - 97.0 100 60 - 140 % - 97.0 100 60 - 140 |



QUALITY CONTROL - MATRIX SPIKES

Matrix spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of the report. Recovery is shown in Green when within suggested criteria or **Bold** with an appended dagger symbol and **Red**[†] when outside suggested criteria.

| | | Control | | MS | | |
|--|-------|---------|--------|--------------------|-------------|------------|
| Parameter | Units | LOR | Result | Original Result | Spike Added | Recovery % |
| Mercury in Soil Method: ME-(AU)-[ENV]AN312 LB006209.004 | | | | | | |
| Mercury | mg/kg | 0.05 | 0.23 | 0.0450145748987855 | 0.2 | 93 |

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest (SYDNEY) Method: ME-(AU)-[ENV]AN040/AN320

LB006209.004

| Arsenic, As | mg/kg | 3 | 50 | 15.3700865867801 | 50 | 70† |
|--------------|-------|-----|----|-------------------|----|-----|
| Cadmium, Cd | mg/kg | 0.3 | 42 | 0.209401559721686 | 50 | 84 |
| Chromium, Cr | mg/kg | 0.3 | 50 | 13.4843737920371 | 50 | 73 |
| Copper, Cu | mg/kg | 0.5 | 52 | 14.2243573637418 | 50 | 76 |
| Lead, Pb | mg/kg | 1 | 49 | 14.0347816003093 | 50 | 70† |
| Nickel, Ni | mg/kg | 0.5 | 47 | 7.09951971395439 | 50 | 80 |
| Zinc, Zn | mg/kg | 0.5 | 73 | 45.4335504445304 | 50 | 55† |

Recovery failed acceptance criteria due to matrix interference.

Recovery failed acceptance criteria due to matrix interference.

Recovery failed acceptance criteria due to matrix interference.

LB006209.030

| Arsenic, As | mg/kg | 3 | 34 | 0.822266060282225 | 50 | 66† |
|--------------|-------|-----|----|-------------------|----|-----|
| Cadmium, Cd | mg/kg | 0.3 | 39 | 0.14146897906395 | 50 | 79 |
| Chromium, Cr | mg/kg | 0.3 | 51 | 12.7122859641027 | 50 | 77 |
| Copper, Cu | mg/kg | 0.5 | 50 | 9.37039121511672 | 50 | 82 |
| Lead, Pb | mg/kg | 1 | 43 | 5.72164312777792 | 50 | 75 |
| Nickel, Ni | mg/kg | 0.5 | 46 | 5.9956203701455 | 50 | 80 |
| Zinc, Zn | mg/kg | 0.5 | 55 | 14.3096067204236 | 50 | 82 |

Recovery failed acceptance criteria due to matrix interference.

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

| LB006152.028 | | | | | | |
|--|-------|-----|-------|-------|------|-----|
| TRH C10-C14 | mg/kg | 20 | 430 | 330 | - | NA |
| TRH C15-C28 | mg/kg | 50 | 70 | <50 | - | NA |
| TRH C29-C36 | mg/kg | 50 | 60 | <50 | - | NA |
| VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434 | | | | | | |
| LB006148.004 | | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | 0.1 | 2.1 | <0.1 | 2.27 | 94 |
| Toluene | mg/kg | 0.1 | 2.1 | <0.1 | 2.27 | 93 |
| Ethylbenzene | mg/kg | 0.1 | 2.1 | <0.1 | 2.27 | 93 |
| m/p-xylene | mg/kg | 0.2 | 4.3 | <0.2 | 4.54 | 94 |
| o-xylene | mg/kg | 0.1 | 2.1 | <0.1 | 2.27 | 93 |
| Surrogates | | | | | | |
| Dibromofluoromethane (Surrogate) | % | - | 74.0 | 72.0 | 100 | 74 |
| d4-1,2-dichloroethane (Surrogate) | % | - | 96.0 | 97.0 | 100 | 96 |
| d8-toluene (Surrogate) | % | - | 101.0 | 102.0 | 100 | 101 |
| Bromofluorobenzene (Surrogate) | % | - | 101.0 | 99.0 | 100 | 101 |
| Totals | | | | | | |
| Total Xylenes | mg/kg | 0.3 | 6.4 | <0.3 | - | NA |
| Total BTEX | mg/kg | - | 13 | 0 | - | NA |
| Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-[ENV]AN433/AN434 LB006148.004 | | | | | | |
| TRH C6-C9 | mg/kg | 20 | 25 | <20 | 23 | 108 |
| Surrogates | | | | | | |
| Trifluorotoluene (Surrogate) | % | - | 84 | 95 | - | 84 |



MATRIX SPIKE DUPLICATES

Matrix spike duplicates are calculated as relative percent difference using the formula RPD = | OriginalResult - ReplicateResult | x 100 / Mean The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate. The RPD is evaluated against the maximum allowable RPD criteria and can be graphically represented by a curve calculated from the statistical detection limit and limiting repeatability using the formula: MaxAllowableDifference = 100 x StatisticalDetectionLimit / Mean + LimitingRepeatability Where the MaxAllowableDifference evaluates to a number larger than 200 it is displayed as 200. RPD is shown in Green when within suggested criteria or Bold with an appended dagger symbol and Red⁺ when outside suggested criteria. Control Matrix MSD Solid MS Duplicate Result MS Result Criteria % RPD % Parameter Mercury in Soil Method: ME-(AU)-[ENV]AN312 1 0000000 005

| _ | v | v | ~ | v | 0 | |
|---|---|---|---|---|---|--|
| | | | | | | |
| | | | | | | |
| | | | | | | |

| LB000203.003 | | | | | | |
|--------------|-------|------|------|------|----|---|
| Mercury | mg/kg | 0.05 | 0.23 | 0.22 | 52 | 5 |

FOOTNOTES _

- IS Insufficient sample for analysis.
- Sample listed, but not received. LNR

* NATA Accreditation does not cover this analysis.

۸ Performed by outside laboratory.

LOR Limit of Reporting

Samples analysed as received. Solid samples expressed on a dry weight basis.

- QFH QC result is above the upper tolerance
- QFL QC result is below the lower tolerance
- The sample was not analysed for this analyte NA

The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf

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