ENVIRONMENTAL INVESTIGATION SERVICES

REPORT

TO

EG FUNDS MANAGEMENT

ON

STAGE 1 ENVIRONMENTAL SITE ASSESSMENT

FOR

PROPOSED RESIDENTIAL REDEVELOPMENT

AT

LANE COVE ROAD, ALLENGROVE CRESCENT & EPPING ROAD, NORTH RYDE

APRIL 2008

REF: E21874FJ-RPT

Principal: E H Fletcher BSc (Eng) ME
115 WICKS ROAD, MACQUARIE PARK NSW 2113 • TEL: 02 9888 5000 • FAX: 02 9888 5004
POSTAL ADDRESS: PO BOX 976, NORTH RYDE BC NSW 1670
EIS IS A DIVISION OF JEFFERY & KATAUSKAS PTY LTD • ABN 17 003 550 801
Principals: B F Walker BE DIC MSc P Stubbs BSc MIEAust D Treweek Dip Tech

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1 INTRODUCTION

EGC Custodian Services Pty Ltd commissioned Environmental Investigation Services (EIS), a division of Jeffery & Katauskas Pty Ltd (J&K), to undertake an environmental site screening to assess the likelihood of contamination of the subsurface soils and groundwater for a proposed residential development at the corner of Lane Cove Road, Allengrove Crescent, and Epping Road, North Ryde. The site is formed of 15 residential lots and at the time of this investigation the site was occupied by houses. The site location is shown on Figure 1 and the investigation was confined to the site boundaries as shown on Figure 2.

The screening was undertaken generally in accordance with an EIS proposal of 8 January, 2008 and written acceptance from Mark Sykes of EGC Custodian Services Pty. Ltd. of 30 January 2008.

The proposed development includes demolition of the existing buildings at the site and construction of a residential complex.

This report describes the investigation procedures and presents the results of the environmental site assessment, together with comments, discussion and recommendations.

A geotechnical investigation was performed concurrently with the environmental site screening by J&K and the results are presented in a separate report (Ref. 21874Z, dated 5 March, 2008).

2 ASSESSMENT OBJECTIVES

2.1 Investigation Objectives

The primary objective of the investigation was to assess the soil conditions at the site in relation to the suitability of the site for the proposed land use in accordance with the *Guidelines for Consultants Reporting on Contaminated Sites NSW DECC (formerly the EPA) 1997* and the *State Environmental Planning Policy No.55 – Remediation of Land* (SEPP55).

2.2 Scope of Work

The scope of work undertaken to achieve the objective included:

1. Assessment of historical site use, including review of historical aerial photographs, land title records search, review of the deposited plan and development applications/building approvals held by Council.

2. Review of regional geology and groundwater conditions, including the location of registered groundwater bores and major underground services in the vicinity of the site.
3. Search of WorkCover Dangerous Goods Licenses for underground fuel storage tanks (USTs), and investigation/remediation orders issued by the NSW DECC (EPA).
4. Design and implementation of a field sampling program.
5. Preparation of a report presenting the results of the assessment of potential soil contamination.

Field work for this investigation was undertaken on 6 February 2008.

2.3 Data Quality Objectives

The purpose of Data Quality Objectives is to develop criteria to assess the reliability of the laboratory data. The Data Quality Objectives established for this project are summarised below:

- Collection and analysis of 11% of the field samples as intra-laboratory duplicates.
- Relative percentage differences (RPDs) were calculated for intra-laboratory duplicates. The RPD was calculated as the absolute value of the difference between the initial and repeat result divided by the average value, expressed as a percentage. The following acceptance criteria were used to assess the RPD results:
    - For results that were greater than 10 times the Practical Quantitation Limit (PQL) RPDs less than 50% were considered acceptable.
    - For results that were between 5 and 10 times PQL RPDs less than 75% were considered acceptable.
    - For results that were less than 5 times the PQL RPDs less than 100% were considered acceptable.
- Review of laboratory QA/QC data (including surrogate recovery, repeat analysis, duplicates, matrix spikes and method blanks).

The success of the Data Quality Objectives is based on assessment of the data set as a whole and not on individual acceptance or exceedance within the data set.

3 SITE INFORMATION

3.1 Site Description

The site identification details are summarised below:

Site Owner:	EGC Custodian Services P/L
Site Address:	Allengrove Crescent, Lane Cove Road & Epping Road, North Ryde
Lot & Deposited Plan:	Lot 3-7/DP28702, Lot 24-23/DP869002, Lot100-101/DP739172, Lot 9/DP576484, Lot 1-2DP845252 and Lot 10/DP606927
Local Government Authority:	Ryde Council
Current Zoning:	Residential 2A
Site Area:	Approximately 14,000m^2
Geographical Location (MGA):	N: 6259470 E: 326380 (approximately)
Site Locality Plan:	Refer to Figure 1
Site Layout Plan	Refer to Figure 2

The site is located on the corner of Epping Road and Lane Cove Road which form the east and west site boundaries respectively. The site is situated to the north of Allengrove Crescent which extends from Lane Cove Road at the south extent of the site. The regional topography falls to the north-west towards Lane Cove Road which is relatively flat.

At the time of the field investigation the site was divided into 15 residential lots.

- No. 218 Epping Road was at the east section of the site. The lot was occupied by a 1 story residence of brick and fibro construction, situated on the west area of the lot, facing Epping Road, which formed the north-east lot boundary. The building was raised by approximately 1m with pebbled concrete steps leading to the front door and porch area. A garage building was located at the rear of the house. A grassed area surfaced the front of the lot and sloped towards the north-west at approximately 3 ^{0}. A 0.5m high red brick wall formed the street boundary. A weathered concrete driveway with grass covered areas extended along the south east of the 1 storey building from Epping Road to the garage of lot No 218A at the rear of the house. The driveway was located to the south east of the 1 story building. Tall shrubs were situated directly in front of the house. Trees were located to the north-west of the lot. A tap was located on the east end of the house and on the east side of the driveway. A residential house was located to the south-east of the lot.

- No. 218A Epping Road occupied the site at the south-west extent of No. 218. and contained a 1 storey brick and fibro clad residence located in the north-west section of the lot. The building was raised with steps of approximately

1m leading to the front and rear doors. A brick/fibro garage was located to the south of the lot. Attached to the garage was an open wooden shed with plastic roofing. The weathered concrete driveway with grass covered areas extended along the south-east of the 1 story building from Epping Road to the garage at the rear of the house. An overgrown garden area in the front of the house contained a concrete pathway leading to the front door. At the rear of the 1 storey building to the west extent was an overgrown grass area and to the south/south-west was weathered concrete pavement. A large tree and flower area were situated at the south-west of the lot. The lot slightly sloped to the north-west by approximately 2^0. There was a tap located at the rear and side of the house on the east. There was a drainage hole in the driveway at the east side of the one story building. Residential property was to the east of the lot. Beyond the south-west boundary were garden sheds and a vegetable plot. This piece of land did not seem to be in use.

- No. 285 Epping Road & Lane Cove Road was situated on the corner of Lane Cove Road and Epping Road which formed the west and east site boundaries respectively. This lot was used as a recreational sitting area and occupied the north area of the site. The topography of the park was relatively flat. Two wooden sitting benches were positioned in the south/south-west section of the lot. This area was concrete pavement and extended to the entrance of the park with leaf foliage area on either side. The park was retained by wooden fencing of approximately 1m in the north/north-west. Concrete steps formed the entrance of the park in the north. There was a large rock placed in the north-west region near the edge of the pathway towards the entrance. The park was surrounded by tall trees. Beyond the park were residential areas to the south-west and south-east. Two high pressure gas mains were sited on the west and south-west boundaries.

- No. 261A Lane Cove Road occupied the central section of the site. The one story brick residential house was located in the south east region of the lot. A garage was situated in the north-east section. The front of the house displayed a well kept grass surfaced area surrounded by shrubs and tress with the exception of the north-east edge of the lawn. This area formed the weathered concrete/grassy driveway. The driveway extended from Lane Cove Road at the north-east extent of the lot, to the garage adjoining the residence in the east. The driveway and garden areas were sloped downwards to the north-west at approximately 7°. In the east region of the lot was a neatly kept garden area with children's toys. To the north and south-west were residential properties.

- No. 259 Lane Cove Road was occupied by a 1 story residence brick building located in the north-west section of the site and bounded in the north-west by Lane Cove Road. The house situated in the north-west area of the lot was raised by approximately 2m with steps leading to the front door. At the rear of

the 1 story building was an overgrown grassed surfaced area which extended along the west of the house and sloped downwards towards Lane Cove Road by approximately 4 ^{0} to 7 ^{0} gradually getting steeper as it approached Lane Cove Road.

- No. 1 Allengrove Crescent occupied the south-west region of the site. A one story residential building was centrally located in the lot, facing Allengrove Crescent, which formed the south-west boundary. The house was raised by approximately 1m with pebble dash steps leading to the front door and porch area. The garage was adjoined to the house on the east. The concrete/pebble dash driveway extended from Allengrove Crescent to the garage in the west. In the front of the house was a neatly kept garden with palm trees in the central, west and south location of the garden. The garden was bounded by a 0.5m brick wall at the front of the house. This area was slopped downwards to the north-west by approximately 2^0. The lot was bounded in the north by a well kept fruit and vegetable garden and a residential property to the south east.

- No. 9 Allengrove Crescent occupied the south region of the site. A one story residential fibro clad construction was centrally located in the lot, facing Alllengrove Crescent, which formed the south-west boundary. The house was raised by approximately 0.5m with steps leading to the front door. The concrete/grass driveway extended from Allengrove Crescent along the north east section of the building. Beyond the driveway were trees. A grassed area surfaced the front of the house. The driveway and grassed area were sloped downwards towards the north-east by approximately 1^0. Trees were covering the front of the house. Two taps were located next to the driveway in the front of the house in the north-west. To the north-west and north-east were residential properties.

An additional eight residential properties made up the site. Those eight properties were not inspected in detail. In general their construction and condition were similar to the seven properties described above.

To the south and east of the site were residential properties. A new rail station located approximately within 400m to the north of the site was under constructed beyond the Lane Cove Road, Epping Road Junction. A corporate office building was located to the west of the site.

3.2 Regional Geology and Hydrogeology

The 1:100,000 geological map of Sydney (Map 9130, 1:100,000 Department of Mineral Resources [now the Department of Primary Industries] – 1983) indicates the

site to be underlain by Ashfield Shale of the Wianamatta Group, which typically consists of black to dark grey shale and laminate.

Department of Water and Energy (DWE) records researched for the investigation and indicated that 3 registered groundwater bores lie within 1km of the site. Detailed information was not available for 2 of these groundwater bores. The details for one groundwater bore is summarised below:

Ref No	Approx. distance from site(m)	Approx. direction from site	Depth(m)	Registered Purpose
GW107998	1km	North East	180	Industrial

The stratigraphy of the site is expected to consist of residual clayey soils overlying relatively shallow bedrock. Based on these conditions groundwater is not considered to be a significant resource in the immediate area of the site.

4 SITE HISTORY ASSESSMENT

4.1 Aerial Photographs

Aerial photographs were reviewed as part of the assessment of the site history. The following information was obtained:

1930 - The site was a wooded area. No buildings were present in the vicinity of the site. A dirt road extended from Lane Cove Road to Epping Road at the south extent of the site. The wooded area extended further to the south of this dirt road and to the south-east of the site. Lane Cove Road was located to the west of the site, Epping Road was located to the west and Lane Cove Road/Epping Road Junction was located to the north.

1951 - The site and surrounding area appear similar to the 1930's photograph. The wooded area to the south-east had been cleared and a dirt road linking Epping Road to the cleared area had been created.

1961 - The majority of the wooded area was cleared leaving very little vegetation on the site. The area surrounding the site was more developed with residential properties. The area to the north-west on the opposite side of Lane Cove Road was residential.

1970 - The site appeared similar to the 1961 photograph. The area to the south and the west of Lane Cove Road was further developed with residential properties.

1978 - The site had been cleared. The surrounding area appeared similar to the 1970's photograph.

1986 - The site and surrounding area appear similar to the 1978 photograph. Two large warehouses had been constructed to the north of the site across the Lane Cove/Epping Road junction together with four large warehouses to the east/north-east on the other side of Epping Road.

1994 - The site appeared to be residential with many trees. The surrounding area was residential. However, further commercial/industrial development had occurred to the east/north-east on the other side of Epping Road.

2002 - The site and surrounding area appeared similar to the 1994 photograph.

2005 - The site and surrounding area appeared similar to the 2002 photograph.

4.2 Land Title Search

A limited historical land title search was performed on a section of the lots on our behalf by the NSW Land Titles Office. Details are presented in Appendix C and a summary of the relevant information is provided below:

Lot 5 in DP28702

Registration Date	Proprietor
15-1-2008	EGC Custodian Services P/L
3-8-2005	Break in Records
31-1-1991	Michael Debs & Mary Monhem
24-7-1990	Permanent Trustee Company Ltd of 23-25 O' Connell Street, Sydney
29-5-1958	Dorothy Emily Stockham (Retired Business Women/Stenography)
26-3-1958	Henry Jackson Singleton (Retired Gentleman)
27-3-1946	Henry Jackson Singleton
15-10-1926	Henry Jackson Singleton
2-12-1920	Henry Jackson Singleton

Lot 23 in DP869002 (previously part of Lot 3 & 4 DP504970, Lot A, E & F DP11865, Lot 1, 2, 3, 4, 5 & 11 DP11865 & Number 13)

Registration Date	Proprietor
15-1-2008	EGC Custodian Services Pty Ltd

Registration Date	Proprietor
19-2-2004	Break in Records
1-3-2001	Cannies Bao Jian Pan & ZeQiang Lian
23-2-1998	John Henry Lette & Gem Lillian Lette
21-1-1998	Jean Elsie Pieremont and John Henry Lette
26-11-1997	Lot 23 DP 869002 created
	Lot 4 DP504970
18-10-1983	Dorothy Ethel Lette (Widow)
	Lot 3 DP504970
17-5-1966	John Henry Lette (Insurance Representative) & Gem Lillian Lette
	Lot E DP11865
21-8-1953	Dorothy Ethel Lette
	Lot F DP11865
21-8-1953	Dorothy Ethel Lette
	Lot A DP11865
27-7-1943	Dorothy Ethel Lette, wife of Henry Edward Lette (Poultry Farmer)
	Lot 2 & 3 DP11865
20-7-1943	Rachel Evelyn Mannes of part
19-6-1943	Edmond Hildreth & Elizabeth Hildreth as joint tenants of part
19-6-1943	Helen Isabel Fox of part
3-6-1943	Dorothy Ethel Lette of Part
9-12-1930	Edmond Hildreth (Of Ryde Leading Hand)
	Residue of Lot 11 DP11865
12-11-1930	Edmond Hilreth (assuming this is Lot 2 & 3 DP 11865 dated 9-12-1920)
	Lot 1 DP11865
15-7-1926	John Churchman Mathews and Phyllis Jane Mathews
	Lot 4 DP11865
7-7-1926	John Thomas Larkin
	Lot 5 DP11865
7-7-1926	Thomas Lucker Allord
	Lot 11 DP11865

Registration Date	Proprietor
29-4-1926	Alice Hay wife of James William Hay of Henley Engineer
5-2-1916	Walter Joseph Cox (Orchardist) **Number 13 in the schedule of documents (All that piece of land situated in the Municipality of Ryde Parish of Hunters Hill, County of Cumberland)**
16-9-1913	Walter Joseph Cox
20-7-1892	Joseph Cox
30-11-1852	R. Allen
25-4-1851	G.E. Turner and F.J.K.F. Bingmann
29-5-1848	G.E. Turner and Ross Donnelly

Lot 100 in DP739172 (previously part of lot 10 DP576484 & Lot B 11865)

Registration Date	Proprietor
15-1-2008	EGC Custodian Services Pty Ltd
21-1-2004	Break in Records
15-1-1987	Ohannes Simonian (Retired) and Elizabeth Simonian his wife, Tacvor Simonian (Telecom Employee) and Marie Simonian his wife **Lot 10 DP576484**
30-5-1975	The Commissioner for Main Roads **Lot B DP11865**
28-6-1985	Eric Alfred Smith (Accountant) (V798847 excluding land in T685650 & P296462)
27-9-1947	Eric Mosman Smith (Baker)
27-9-1946	Frederick Wallace Mannes (Police Officer) and Mabel Evelyn Mannes his wife
13-8-1943	Edmond Hildreth (of Hunters Hill Leading Hand) and Elizabeth Hildreth, his wife

Lot 10 in DP606927 (previously part of Lot G DP11865, Lot 17 DP246473)

Registration Date	Proprietor

Registration Date	Proprietor
15-1-2008	EGC Custodian Services Pty Ltd
21-1-2004	Break in Records
28-10-1980	Robert James Benson (Motor Mechanic)
	Lot 17 DP246473
18-10-1983	The Commissioner For Main Roads
	Lot G DP11865
21-11-1975	The Commissioner For Main Roads
24-8-1953	Ronald Steinberg Pieremont (Commonwealth Public Servant) and Jean Elsie Pieremont, his wife
	Lot C DP11865
9-5-1953	Ronald Steinberg Pieremont and Jean Elsie Piermont of part
8-8-1947	Dorothy Ethel Lette (Married Women)
22-2-1945	Evelyn Mannes wife of Frederick Wallace Mannes (Maintenance Worker)
13-8-1943	Helen Isabel Fox, wife of Claude Arthur Fox (Clerk)

The land search has indicated that an orchardist (1916-1926), poultry farmer (1943 – 1953), and motor mechanic (1980 – 2004) occupied sections of the land.

4.3 Council Records

A search of Development Application (DA) and Building Approval (BA) records held by Ryde Council was undertaken on behalf of EIS. The results of the search are summarised below:

Lot 23 in DP869002, No. 259A Lane Cove Road, North Ryde

- 1980 - Development Application No. 488/80 approved for addition to existing residence. Applicant: Mr. & Mrs. J. Lette.
- 1985 - Development Application No. 1029/85 approved for the erection of a free standing carport. Applicant: Mr. Lette.

Part Lot 3 in DP371325, No. 122 Epping Road, North Ryde

- 1976 – Development Application No. 1863/76 approved for the construction of an inground fibreglass swimming pool. Applicant: W. Watkins.
- 1989 – Development Application No. 773/89 approved for the alteration and addition to dwelling. Applicant: Karl and Nadia Heers.

- 1993 – Development Application No. 573/93 approved to erect a detached dwelling-house for the purposes of dual occupancy and to subdivide the resultant development into two lots. Applicant: Mrs. N. Heers.

Lot 6 in DP28702, No. 7 Allengrove Crescent, North Ryde

- 1961 – Development Application No. 74/1961. This search request turned up no further information. The Council no longer has the plans or any information relating to this Building Application.

4.4 WorkCover Database Records

A records search for underground storage tanks was undertaken on our behalf by WorkCover. The records did not indicate the existence of any licences for underground storage tanks at this site.

4.5 NSW EPA Records

A search of the NSW EPA on line database did not indicate the existence of any DECC (EPA) notices for the site under section 58 of the Contaminated Land Management Act (1997).

4.6 Summary of Historical Site Use

The search of historical information has indicated the following:

- Parts of the site had been used for agricultural purposes prior to 1953 and may have been used for vehicle repair/service between 1980 and 2004.
- The site has been used predominantly for residential purposes.
- There are no recorded notices listed on the NSW DECC CLM register and WorkCover have no records of underground storage tank licenses issued for the site.

4.7 Potential Contamination Sources

4.7.1 General Contamination Processes

Contamination of surface and subsurface soils generally arises from previous land use that can include petroleum hydrocarbon and warehouse storage, manufacturing processes and pesticide and fertiliser usage. Imported fill soils may contain contaminants derived from unknown sources. Migration of contaminants can occur in permeable subsurface soil or fill materials and via man-made and natural drainage systems. The extent of contamination migration is dependent on the hydro-geological environment and the chemical and physical characteristics of the contaminants. Contamination migration in clayey soils can be expected to be limited, whilst sandy soils are conducive to greater spatial migration.

Backfill to service trenches can form contamination migration pathways via poorly compacted or permeable backfill. Backfill may also be contaminated.

The general history of contamination of sites in the Sydney region indicates that analysis for heavy metals including lead, copper and zinc should be incorporated in the schedule of laboratory testing. In addition screening tests should be performed on selected samples for polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCs), polychlorinated biphenyls (PCBs), petroleum hydrocarbons (TPH), asbestos monocyclic aromatic hydrocarbons (BTEX) and asbestos. Contaminants including cyanide, phenolic compounds, barium, beryllium, cobalt, manganese, vanadium and boron are generally associated with specific site industrial uses and so have not been considered in this investigation.

4.7.2 Potential Site Specific Contamination

- Potentially contaminated, imported fill material;
- Pesticide or fertiliser usage associated with the fruit and vegetable gardens; and
- Localised hydrocarbon and volatile organic compound contamination associated with vehicle service.

4.8 Potential Receptors

The main potential contamination receptors are considered to include:

- Site visitors, workers and adjacent property owners, who may come into contact with contaminated soil and/or be exposed to contaminated dust arising from construction activity.
- Future site occupants.

4.9 Contaminant Laydown and Transport Mechanisms

At this site, mobile contaminants would be expected to move down to the rock surface and migrate laterally down-slope from the source. The movement of contaminants would be expected to be associated with groundwater flow and seepage at the top of the bedrock.

5 ASSESSMENT CRITERIA DEVELOPMENT

5.1 Regulatory Background

In 1997 the NSW Government introduced the *Contaminated Land Management Act, 1997* (CLM Act). This act, associated regulations, State Environmental Planning Policy (SEPP) No.55 – Remediation of Land (1998) and associated NSW DECC (EPA)

guidelines, were designed to provide uniform state-wide control of the management, investigation and remediation of contaminated land.

Prior to granting consent for any proposed rezoning or development, SEPP55 requires the consent authority to:

- consider whether the land is contaminated;
- consider whether the site is suitable, or if contaminated, can be made suitable by remediation, for the proposed land use;
- be satisfied that remediation works will be undertaken prior to use of the site for the proposed use.

Should the assessment indicate that the site poses a risk to human health or the environment, remediation of the site is required prior to commencement of the proposed development works. SEPP55 requires that the relevant local council be notified of all remediation works, whether or not development consent is required. Where development consent is not required, 30 days written notice of the proposed works must be provided to council. Details of validation of remediation work must also be submitted to Council within one month of completion of remediation works.

The consent authority may request that a site audit be undertaken during, or following the completion of the site assessment process. Under the terms of the CLM Act the NSW DECC (EPA) Site Auditor Scheme was developed to provide a system of independent review for assessment reports. An accredited Contaminated Site Auditor is engaged to review reports prepared by suitably qualified consultants to ensure that the investigation has been undertaken in accordance with the guidelines and confirm that the sites are suitable for their intended use.

Section 59(2) of the CLM Act states that specific notation relating to contaminated land issues must be included on S.149 planning certificates prepared by Council where the land to which the certificate relates is:

- within an investigation or remediation area.
- subject to an investigation or remediation order by the DECC (EPA).
- the subject of a voluntary investigation or remediation proposal.
- the subject of a site audit statement.

Submission of contaminated site investigation and validation reports to council as part of rezoning or development application submissions may also result in notation of actual or potential site contamination on future S.149 certificates prepared for the site. Section 60 of the CLM Act sets out a positive duty on an owner, or person whose activities cause contamination, to notify the DECC if they are aware that the contamination presents a significant risk of harm.

Off-site disposal of fill, contaminated material and excess soil/rock excavated as part of the proposed development works is regulated by the provisions of the Protection of the Environment Operations Act (POEO Act 1997) and associated regulations and

guidelines including the *NSW DECC (EPA) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes* (1999). All materials should be classified in accordance with these guidelines prior to disposal.

Section 143 of the *Protection of the Environment Operations Act 1997* states that if waste is transported to a place that cannot lawfully be used as a waste facility for that waste, then the transporter and owner of the waste are each guilty of an offence. The transporter and owner of the waste have a duty to ensure that the waste is disposed of in an appropriate manner.

5.2 Soil Contaminant Threshold Concentrations

The soil investigation levels adopted for this investigation are derived from the NSW DECC (EPA) document *Guidelines for the NSW Site Auditor Scheme (1998)* and the National Environmental Protection Council document *National Environmental Protection (Assessment of Site Contamination) Measure 1999*. The contaminant thresholds listed below are levels at which further investigation and evaluation is required to assess whether the site is considered suitable for the proposed urban land use.

To accommodate the range of human and ecological exposure settings, a number of generic settings are used on which the Health based Investigation Levels (HILs) can be based. Four categories of HILs are adopted for urban site assessments. Contaminant levels for a standard residential site with gardens and accessible soil (Column A in Table A-1) are based on protection of a young child resident at the site. The remaining categories (Columns D to F) present alternative exposure settings where there is reduced access to soil or reduced exposure time. These categories include residential land use with limited soil access, recreational and public open space and commercial/industrial use. Where the proposed land use will include more than one land use category (eg. mixed residential/commercial development) the exposure setting of the most "sensitive" land use is adopted for the site.

Threshold concentrations for petroleum hydrocarbon contaminants including total petroleum hydrocarbons (TPH) and monocyclic aromatic hydrocarbon (BTEX) compounds have previously been established in the *NSW DECC (EPA) Contaminated Sites: Guidelines for Assessing Service Station Sites* (1994) publication and this document is referenced in the 1998 Site Auditor Guidelines. Heavy fraction petroleum hydrocarbon aliphatic/aromatic component threshold concentrations have also been introduced in the *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (NEPC Guidelines).

The urban interim Ecological Investigation Levels (EILs) are generic values based on phytotoxicity data for plant response to specific contaminants in a sandy loam matrix and are included in the contaminated site assessment where the proposed land use includes gardens and accessible soils.

The *National Environmental Protection (Assessment of Site Contamination) Measure 1999* (NEPC Guidelines) do not provide numeric guidelines for the assessment of asbestos in soil. NSW DECC (EPA) advice has indicated that based on health concerns there should be no asbestos in soil at the surface, however the NSW DECC (EPA) have not published numerical guidelines for the assessment of asbestos in subsurface soils.

The WorkCover publication *Your Guide to Working with Asbestos: Safety Guidelines and Requirements for Work Involving Asbestos* (NSW WorkCover 2003) indicates that inappropriately buried asbestos materials are considered to be friable asbestos material. "Any asbestos cement product, which has been subjected to weathering, severely damaged by hail, damaged by heat/fire or other mechanical action, or illegal water blasting is (also defined as) a friable asbestos product". Under the *NSW Occupational Health and Safety (OHS) Regulations 2001* and WorkCover requirements all necessary disturbance works associated with asbestos containing materials must be conducted by a licensed AS-1 Asbestos Removal Contractor.

5.2.1 Site Assessment Criteria for Soil Contaminants

The residential exposure setting has been adopted for this assessment and the appropriate soil criteria are listed in the following table:

For the purpose of off-site disposal, the classification of soil into 'inert', 'solid', 'industrial' and 'hazardous' waste categories is defined by chemical contaminant criteria outlined in the *NSW DECC (EPA) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-Liquid Wastes - 1999*. These chemical contaminant criteria are summarised in Table A-2.

Site Soil Assessment Criteria (mg/kg)			
Contaminant	**HIL Column A Exposure Setting**	**Guidelines for Assessing Service Station Sites (1994)**	**Ecological Investigation Levels**
Inorganics			
Arsenic (total)	100		20
Cadmium	20		3
Chromium (III)	12%		400
Copper	1000		100
Lead	300		600
Mercury (inorganic)	15		1
Nickel	600		60
Zinc	7000		200
Organic Contaminants			
TPH (C_6-C_9)	65	65	
TPH (C_{10}-C_{36})	1000	1000	
Benzene	1	1	
Toluene	1.4	1.4	
Ethylbenzene	3.1	3.1	
Total Xylenes	14	14	
Total PAHs	20		
Benzo(a)pyrene	1		
Aldrin + Dieldrin	10		
Chlordane	50		
DDT + DDD + DDE	200		
Heptachlor	10		
PCBs (Total)	10		

5.3 Evaluation of Soil Analysis Data and Contaminant Threshold Concentrations

Assessment of the soil analytical data using the soil contaminant threshold concentrations has been undertaken in accordance with the methodology outlined in the *National Environmental Protection (Assessment of Site Contamination) Measure (1999) Schedule 7(a) Soil Investigation Levels* and the statistical analysis methods outlined in the *NSW EPA Contaminated Sites Sampling Design Guidelines (1995)*.

The following criteria have been adopted for assessment of the analytical data:

- For a site to be considered suitable for the proposed land use the 95% Upper Confidence Limit (UCL) value of the arithmetic mean concentration of each contaminant should be less than the applicable contaminant threshold concentration.

- The relevance of localised elevated values must also be considered and should not be obscured by consideration only of the arithmetic mean of the results. The results must also meet the following criteria:
  - the standard deviation of the results must be less than 50% of the soil assessment criteria; and
  - no single value exceeds 250% of the relevant soil assessment criteria.

Where contamination results exceed the site criteria developed above a method of remediating the site is to physically and selectively remove the contamination hotspots from the site. This process should be continued until statistical analysis of the data meets the above criteria. Validation of the remediated site is generally required to demonstrate that the site is suitable for the proposed land use.

6 ASSESSMENT PLAN AND METHODOLOGY

The *NSW DECC (EPA) Sampling Design Guidelines (1995)* for contaminated site investigations state a minimum of 24 evenly spaced sampling points should be undertaken for a site of this size (approximately 14,000m^2). Seven sampling locations have been undertaken for this investigation. This density meets 29% of the minimum sampling density. This density is considered to be satisfactory for a Stage 1 assessment.

The boreholes were drilled on a uniform sampling plan with a spacing of up to 80m between sampling points. A uniform sampling plan was considered most appropriate for this investigation as:

- no specific potential contaminant sources were identified by the available site history.
- the distribution of contamination is expected to be associated with imported potentially contaminated fill material and is therefore likely to be random.

Sampling was not undertaken beneath the existing buildings at the site as access was not available during the field investigation.

7 INVESTIGATION PROCEDURE

7.1 Subsurface Investigation and Soil Sampling Methods

Seven sampling locations were undertaken using hand equipment as the site access was restricted. The hand equipment was decontaminated using a scrubbing brush, potable water and Decon 90 solution (phosphate free detergent) followed by rinsing with potable water after each sampling event. Sampling personnel used disposable Nylex gloves during sampling activities.

Soil samples were obtained at various depths, based on observations made during the field investigation. All samples were placed in glass jars with plastic caps and teflon

seals with minimal headspace. During the investigation, samples were preserved by immediate storage in an insulated sample container with ice. Each sample was labelled with a unique job number, the sampling location, sampling depth and date. All samples were recorded on the borehole logs presented in Appendix A and on the chain of custody (COC) record presented in Appendix B.

On completion of the fieldwork, the samples were delivered in the insulated sample container to a NATA registered laboratory for analysis under standard chain of custody procedures. Detailed EIS field sampling protocols are included in Appendix D.

7.1.1 Photoionisation Detector (PID) Screening

A portable PID was used in this investigation to assist with selection of samples for laboratory hydrocarbon (TPH/BTEX) analysis. The PID is sensitive to volatile organic compounds. The sensitivity of the PID is dependent on the organic compound and varies for different mixtures of hydrocarbons. Some compounds give relatively high readings and some can be undetectable even though present in identical concentrations. The portable PID is best used semi-quantitatively to compare samples contaminated by the same hydrocarbon source.

The PID is calibrated before use by measurement of an isobutylene standard gas. All the PID measurements are quoted as parts per million (ppm) isobutylene equivalents.

Photoionisation detector (PID) screening of detectable volatile organic compounds (VOC) was undertaken on soil samples using the soil sample headspace method. VOC data was obtained from partly filled glass jar samples following equilibration of the headspace gases. The PID headspace data is included on the COC documents.

7.2 Laboratory Analysis

7.2.1 Soil Samples

Analysis of soil samples was undertaken by NATA registered laboratories using analytical methods detailed in the Schedule B(3) NEPC (1999) Guideline on Laboratory Analysis of Potentially Contaminated Soils. Laboratory analysis was undertaken by Envirolab Services Pty Ltd (NATA Accreditation No. 2901).

For this investigation selected soil samples were analysed for contaminants using the following laboratory techniques:

- Heavy metals – Nitric acid digestion. Analysis by ICP.
- Low level mercury – cold vapour AAS.
- OC pesticides and PCBs – Extracted with acetone/hexane. Analysis by GC/ECD.
- PAHs – Soil extracted with dichloromethane/acetone. Analysis by GC/MS.

- TPH (volatile) – Soil extracted with methanol. Analysis by P&T GC/PID.
- TPH – Soil extracted with dichloromethane/acetone. Analysis by GC/FID.
- BTEX – Soil extracted with methanol. Analysis by P&T PID. Confirmed with column flame ionisation detection.
- Asbestos – Polarizing light microscopy.

8 RESULTS OF INVESTIGATION

8.1 Subsurface Conditions

Site details and borehole locations are shown on Figure 2. For details of the subsurface soil profile reference should be made to the borehole logs in Appendix A. A summary of the subsurface conditions encountered by the boreholes is presented below:

Topsoil/Fill

Topsoil/fill material generally consisting of silty clay and silty sandy clay with varying proportions of brick, rootlets, concrete/sandstone/ironstone gravel, and ash was encountered in the seven boreholes ranging in depth from 0.2-0.4m. Traces of iron indurated shale were encountered in BH7. The depth of fill ranged from 0.2 to 0.4 in all seven boreholes

Natural Soils

Natural silty clay was encountered underlying the topsoil/fill material in all of the boreholes. The silty clay was generally of high plasticity and ranged in depth from approximately 0.2 to 1.5.

Groundwater

Groundwater seepage was encountered in boreholes BH1 and BH2 at depths of approximately 1.7m and 0.8m respectively. No groundwater was encountered in the remaining boreholes.

8.2 Laboratory Results - Soil

The laboratory analysis results for soil samples are summarised in Table B to Table C inclusive and analysis reports are presented in Appendix A. The site soil assessment criteria for this investigation are specified in the "Site Assessment Criteria for Soil Contaminants" section earlier in this report. The results of the analyses are summarised below.

Heavy Metals

Nine individual soil samples were analysed for heavy metals. The results were less than the site assessment criteria with the exception of two samples. Sample

BH5 (0.0m-0.1m) contained 35mg/kg of arsenic, 2mg/kg of mercury and 220mg/kg of zinc. The Environmental Investigation Levels of arsenic, mercury and zinc are 20mg/kg, 1mg/kg and 200mg/kg respectively. An elevated nickel concentration of 66mg/kg was encountered in BH1 (0.0m-0.1m). The Environmental Investigation Level for nickel is 60 mg/kg.

Petroleum Hydrocarbons (TPH) and Monocyclic Aromatic Hydrocarbons (BTEX)

PID soil sample headspace readings were all zero ppm equivalent isobutylene. These results indicate a lack of PID detectable volatile organic contaminants. Nine selected samples were analysed for petroleum hydrocarbons and BTEX compounds. The results of the analyses were below the site assessment criteria.

Polycyclic Aromatic Hydrocarbons (PAHs)

Nine selected samples were analysed for a range of PAHs including Benzo(a)pyrene. The results of the analyses were less than the site assessment criteria.

Organochlorine (OC) Pesticides and Polychlorinated Biphenyls (PCBs)

Nine selected samples were analysed for a range of OC pesticides and PCBs. The results of the analyses were below laboratory practical quantitation limit and less than the site assessment criteria.

8.3 Assessment of Analytical QA/QC

The objective of the assessment of the laboratory QA/QC is to ensure that the sample data is reliable. All laboratory reports for project E21874FJ have been checked and issued as final by Envirolab Services Pty Ltd, NATA Accreditation No. 2901, Report number: 17001.

Chain of custody documentation and a sample receipt advice notice were signed and dated by Envirolab Services laboratory stating that all samples were received cool, in good order and in suitable containers. Compliance of holding times was met for all analyses undertaken by the above laboratory. EIS and laboratory QA/QC procedures for the site screening are summarised in the following table:

Contaminant	QA/QC Procedure						
	Total no. of Samples	Intra-lab Duplicate	Inter-lab Duplicate	Repeat Analysis	Matrix Spike	Lab Blank	Surrogate Spike
Heavy metals	9	1	-	1	1	1	-
TPH	9	1	-	1	1	1	9
BTEX	9	1	-	1	1	1	9
PAH	9	1	-	1	1	1	9
PCB	9	1	-	1	1	1	9
OC Pesticides	9	1	-	1	1	1	9

DUP 1 is the intra-laboratory duplicate for BH7 (0.4-0.5)

The RPD results for the field QA/QC duplicate samples are summarised in Table C. The following comments are an overall summary of the quality of the analytical component of the project:

1. Sample integrity and container requirements were documented as satisfactory.
2. All sample extraction analyses were performed within the required holding times.
3. Matrix spike duplicate and surrogate recovery values indicated that the laboratory accuracy was very good, and that no outliers were reported.
4. Laboratory duplicate RPD results indicated that the sample precision was acceptable.
5. All method blanks were found to be free of analyte concentrations above the PQLs.
6. The intra -laboratory RPD values indicated that field precision was acceptable.

The QA/QC data reported by Envirolab Services laboratories for the documented soil and samples were assessed to be of sufficient quality to be considered acceptable for the environmental assessment of EIS project E21874FJ.

The QA/QC data including the RPD results are considered to meet the Data Quality Objectives developed for this project.

9 COMMENTS AND RECOMMENDATIONS

The environmental site assessment undertaken for the proposed residential development at Lane Cove Road, Epping Road and Allengrove Crescent, North Ryde, was designed to assess the suitability of the site for the proposed land use. The proposed development consists of residential complex.

The site assessment included performance of a site inspection, review of historical site use, including examination of regional aerial photographs and review of geology and

groundwater conditions. Historical information indicated that an orchardist and poultry farmer occupied a section of the site prior to 1953 and a motor mechanic resided on part of the land between 1980 and 2004, which may be considered to have resulted in contamination of the soil and groundwater at the site. The historical records indicate that the site has predominantly been used for residential proposes. Potentially contaminating activities in the surrounding areas did not indicate any obvious nearby off-site activity that could be expected to generate significant soil or groundwater contamination. The site soil/fill sampling was subsequently undertaken on the basis of a relatively uniform exploration spacing.

Elevated levels of contaminants were encountered in fill soil samples during this investigation. A summary of the elevated results are presented in the table below:

Summary of Contamination Data in Fill Soil (mg/kg)

Contaminant	EIL*	HIL+	No. of Samples Analysed	No. of Results above the EIL	No. of Results above the HIL	Maximum Value	Mean Value
Arsenic	20	100	9	1	0	35	10.8
Mercury	1	15	9	1	0	2	0.33
Nickel	60	600	9	1	0	66	13.94
Zinc	200	7000	9	1	0	220	89.78

Guideline Levels:

* Ecological Investigation Level - *National Environment Protection (Assessment of Site Contamination) Measure 1999*

\+ Health-Based investigation Level - *National Environment Protection (Assessment of Site Contamination) Measure 1999 – Residential with accessible soil*

The results of the laboratory tests on selected soils samples covered a range of contaminants commonly encountered in the Sydney region. Elevated levels of contaminants were detected in two of the samples analysed. All results were less than the appropriate Health Investigation Levels. Two of the samples contained heavy metal concentrations greater than the Ecological Investigation Levels.
Further analysis of samples for waste classification will be required if off-site disposal of excess soil is undertaken as part of the proposed development. Fill and contaminated soil disposal costs are significant and may affect project viability. These costs should be assessed at an early stage of the project development to avoid significant future unexpected additional costs.

Groundwater seepage was encountered in boreholes BH1 and BH2 at depths of approximately 1.4m and 0.4m respectively. No groundwater was encountered in the remaining boreholes drilled for this project (to a maximum depth of 1.5m). As no significant soil contamination was encountered at the site and as groundwater is not

considered to be a significant resource in the area, groundwater has not been considered in any further detail for this assessment.

The investigation undertaken by EIS included the analysis of 9 surficial soil samples for the presence of asbestos fibres using NATA accredited microscopic screening techniques. Asbestos, either apparent to the naked eye or apparent using microscopic techniques were not detected within the samples. The scope of work undertaken was designed to assess widespread surficial contamination and has not included an exhaustive assessment of the site for the presence of small scale asbestos contamination. EIS adopts no responsibility for small scale or buried asbestos features at the site which may be encountered during future earth or construction works at the site.

The boreholes drilled for the investigation have enabled an assessment to be made of the existence of significant, large quantities of contaminated soils. The conclusions based on this investigation are that, while major contamination of the site is not apparent, problems may be encountered with smaller scale features between boreholes. EIS adopts no responsibility whatsoever for any problems such as underground storage tanks, buried items or contaminated material that may be encountered between sampling locations at the site. The proposed construction activities at the site should be planned on this basis, and any unexpected problem areas that are encountered between boreholes should be immediately inspected by experienced environmental personnel. This should ensure that such problems are dealt with in an appropriate manner, with minimal disruption to the project timetable and budget.

As the density of the investigation is less than the guideline density EIS recommend that during demolition works, the site should be inspected by experienced environmental personnel to assess any unexpected conditions or subsurface facilities that may be discovered between investigation locations. This should facilitate appropriate adjustment of the works programme and schedule in relation to the changed site conditions.

Based on the scope of work undertaken for this assessment EIS consider that the site can be made suitable for the proposed development provided that further assessment of the site is carried out following demolition of the present buildings and material to be disposed of off-site is assigned a waste classification prior to disposal to an accredited waste facility licensed to receive such waste as stated in the NSW EPA Environmental Guidelines: *Assessment, Classification and Management of Liquid and Non-Liquid Wastes – NSW EPA 1999.*

EIS recommend that a hazardous Building Material Survey is undertaken of the existing site structures prior to demolition.

10 LIMITATIONS

The conclusions developed in this report are based on site conditions which existed at the time of the site assessment. They are based on investigation of conditions at specific locations, chosen to be as representative as possible under the given circumstances, and visual observations of the site and vicinity, together with the interpretation of available historical information and documents reviewed as described in this report.

Subsurface soil and rock conditions encountered between investigation locations may be found to be different from those expected. Groundwater conditions may also vary, especially after climatic changes.

Previous industrial use of this site may have involved excavation for the foundations of buildings, services, and similar facilities. In addition, unrecorded excavation and burial of material may have occurred on the site. Backfilling of excavations could have been undertaken with potentially contaminated material that may be discovered in discrete, isolated locations across the site during construction work.

During construction at the site, soil, fill and any unsuspected materials that are encountered should be monitored by qualified environmental and geotechnical engineers to confirm assumptions made on the basis of the limited investigation data, and possible changes in site level and other conditions since the investigation. Soil materials considered to be suitable from a geotechnical point of view may be unsatisfactory from a soil contamination viewpoint, and vice versa.

This report has been prepared for the particular project described and no responsibility is accepted for the use of any part of this report in any other context or for any other purpose. Copyright in this report is the property of EIS. EIS has used a degree of care, skill and diligence normally exercised by consulting engineers in similar circumstances and locality. No other warranty expressed or implied is made or intended. Subject to payment of all fees due for the investigation, the client alone shall have a licence to use this report.

Should you require any further information regarding the above, please do not hesitate to contact us.

Yours faithfully
For and on behalf of
ENVIRONMENTAL INVESTIGATION SERVICES

Rose Healy
Environmental Scientist

E H Fletcher
Principal

ENVIRONMENTAL INVESTIGATION SERVICES

IMPORTANT INFORMATION ABOUT YOUR ENVIRONMENTAL SITE ASSESSMENT

These notes have been prepared by Environmental Investigation Services (EIS) to assist with the assessment and interpretation of this assessment report.

An Environmental Assessment Report is Based on a Unique Set of Project Specific Factors
This assessment report has been prepared in response to specific project requirements as stated in the EIS proposed document which may have been limited by instructions from the client. This report should be reviewed, and if necessary, revised if any of the following occur:

- the proposed land use is altered;
- the defined subject site is increased or subdivided;
- the proposed development details including size, configuration, location, orientation of the structures are modified;
- the proposed development levels are altered, eg addition of basement levels; or
- ownership of the site changes.

EIS/J&K will not accept any responsibility whatsoever for situations where one or more of the above factors have changed since completion of the assessment. If the subject site is sold, ownership of the assessment report should be transferred by EIS to the new site owners who will be informed of the conditions and limitations under which the assessment was undertaken. No person should apply an assessment for any purpose other than that originally intended without first conferring with the consultant.

Changes in Subsurface Conditions
Subsurface conditions are influenced by natural geological and hydrogeological process and human activities. Groundwater conditions are likely to vary over time with changes in climatic conditions and human activities within the catchment (eg. water extraction for irrigation or industrial uses, subsurface waste water disposal, construction related dewatering). Soil and groundwater contaminant concentrations may also vary over time through contaminant migration, natural attenuation of organic contaminants, ongoing contaminating activities and placement or removal of fill material. The conclusions of an assessment report may have been affected by the above factors if a significant period of time has elapsed prior to commencement of the proposed development.

This Assessment is Based on Professional Interpretations of Factual Data
Site assessments identify actual subsurface conditions at the actual sampling locations at the time of the investigation. Data obtained from the sampling and subsequent laboratory analyses, available site history information and published regional information is interpreted by geologists, engineers or environmental scientists and opinions are drawn about the overall subsurface conditions, the nature and extent of contamination, the likely impact on the proposed development and appropriate remediation measures. Actual conditions may differ from those inferred, because no professional, no matter how qualified, and no subsurface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, but steps can be taken to help minimise the

Principal: E H Fletcher BSc (Eng) ME
115 WICKS ROAD, MACQUARIE PARK NSW 2113 • TEL: 02 9888 5000 • FAX: 02 9888 5004
POSTAL ADDRESS: PO BOX 976, NORTH RYDE BC NSW 1670
EIS IS A DIVISION OF JEFFERY & KATAUSKAS PTY LTD A.B.N. 17 003 550 801 A.C.N. 003 550 801
Principals: B F Walker BE DIC MSc P Stubbs BSc MIEAust D Treweek Dip Tech

impact. For this reason, site owners should retain the services of their consultants throughout the development stage of the project, to identify variances, conduct additional tests which may be needed, and to recommend solutions to problems encountered on site.

Environmental Site Assessment Limitations
Although information provided by an environmental site assessment can reduce exposure to the risk of the presence of contamination, no environmental site assessment can eliminate the risk. Even a rigorous professional assessment may not detect all contamination on a site. Contaminants may be present in areas that were not surveyed or sampled, or may migrate to areas which showed no signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant which may occur; only the most likely contaminants are screened.

Misinterpretation of Environmental Site Assessments by Design Professionals
Costly problems can occur when other design professionals develop plans based on misinterpretation of an environmental assessment report. To minimise problems associated with misinterpretations, the environmental consultant should be retained to work with appropriate professionals to explain relevant findings and to review the adequacy of plans and specifications relevant to contamination issues.

Logs should not be Separated from the Environmental Assessment Report
Borehole and test pit logs are prepared by environmental scientists, engineers or geologists based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these should not be re-drawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problems, however contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. If this occurs, delays, disputes and unanticipated costs may result. In all cases it is necessary to refer to the test of the report to obtain a proper understanding of the assessment.

To reduce the likelihood of borehole and test pit log misinterpretation, the complete assessment should be available to persons or organisations involved in the project, such as contractors, for their use. Denial of such access and disclaiming responsibility for the accuracy of subsurface information does not insulate an owner from the attendant liability. It is critical that the site owner provides all available site information to persons and organisations such as contractors.

Read Responsibility Clauses Closely
Because an environmental site assessment is based extensively on judgement and opinion, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. To help prevent this problem, model clauses have been developed for use in written transmittals. These are definitive clauses designed to indicate consultant responsibility. Their use helps all parties involved recognise individual responsibilities and formulate appropriate action. Some of these definitive clauses are likely to appear in the environmental site assessment, and you are encouraged to read them closely. Your consultant will be pleased to give full and frank answers to any questions.

ABBREVIATIONS

AAS	Atomic Absorption Spectrometry
ADWG	Australian Drinking Water Guidelines
AGST	Above Ground Storage Tank
AHD	Australian Height Datum
ANZECC	Australian and New Zealand Environment Conservation Council
ASS	Acid Sulfate Soil
B(a)P	Benzo(a)pyrene
BH	Borehole
BTEX	Benzene, Toluene, Ethyl benzene, Xylene
COC	Chain of Custody documentation
CLM	Contaminated Land Management
DECC	Department of Environment and Climate Change (formerly DEC and EPA)
DNR	NSW Department of Natural Resources (now split between DWE and DECC)
DWE	NSW Department of Water and Energy
DP	Deposited Plan
DQO	Data Quality Objective
EC	Electrical Conductivity
EIL	Ecological Investigation Level
EPA NSW	Environment Protection Authority, New South Wales (now part of DECC)
GC-ECD	Gas Chromatograph-Electron Capture Detector
GC-FID	Gas Chromatograph-Flame Ionisation Detector
GC-MS	Gas Chromatograph-Mass Spectrometer
HIL	Health Based Investigation Level
HM	Heavy Metals
ICP-AES	Inductively Couple Plasma – Atomic Emission Spectra
NATA	National Association of Testing Authorities, Australia
NEPC.	National Environmental Protection Council
NHMRC	National Health and Medical Research Council
OCPs	Organochlorine Pesticides
OHS (OH&S)	Occupational Health and Safety
PAH	Polycyclic Aromatic Hydrocarbons
PCBs	Polychlorinated Biphenyls
PID	Photo-ionisation Detector
PPIL	Provisional Phyto-toxicity Investigation Levels
PQL	Practical Quantitation Limit
P&T	Purge & Trap
RAP	Remedial Action Plan
QA/QC	Quality Assurance and Quality Control
RPD	Relative Percentage Difference
SEPP	State Environmental Planning Policy
sPOCAS	Suspension Peroxide Oxidation Combined Acidity and Sulfate
SPT	Standard Penetration Test
SWL	Standing Water Level
TCLP	Toxicity Characteristic Leaching Procedure
TP	Test Pit
TPH	Total Petroleum Hydrocarbons
USEPA	United States Environmental Protection Agency
UCL	Upper Confidence Limit
UST	Underground Storage Tank
VOC	Volatile Organic Compounds
WP	Work Plan

REFERENCE DOCUMENTS

- ANZECC/ARMCANZ (2000) Australian and New Zealand Guidelines for Fresh and Marine Water Quality (and updates).
- ASSMAC (1998) (Acid Sulfate Soils Management Advisory Committee) Acid Sulfate Soil Manual.
- Australian Government, National Occupational Health and Safety Commission (2005) Code of Practice for the Safe Removal of Asbestos.
- Australian Government, National Occupational Health and Safety Commission (2005) Code of Practice for the Management and Control of Asbestos in Workplaces.
- Australian Petroleum Institute Code of Practice (CP22) Removal and Disposal of Underground Storage Tanks.
- Australian Standard (2004) Storage and Handling of Flammable and Combustible Liquids. AS1940-2004.
- DUAP/NSW EPA (1998) (now NSW Department of Planning / NSW Department of Environment and Climate Change (DECC) incorporating the EPA) Managing Land Contamination: Planning Guidelines SEPP 55 - Remediation of Land.
- Dutch Ministry of Housing, Spatial Planning and the Environment (1994) Environmental Quality Standards in the Netherlands.
- NEPM. (1999) National Environmental Protection (Assessment of Site Contamination) Measure (NEPC. Guidelines).
- NSW EPA (1994) (now NSW DEC) Contaminated Sites: Guidelines for Assessing Service Station Sites.
- NSW EPA (1995) (now NSW DECC) Contaminated Sites: Sampling Design Guidelines.
- NSW EPA (1996) (now NSW DECC) Guidelines for Solid Waste Landfills.
- NSW EPA (1997) (now NSW DECC) Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites.
- NSW EPA (1998) (now DECC) Contaminated Sites: Guidelines for the NSW Site Auditor Scheme.
- NSW EPA (1999) (now NSW DECC) Contaminated Sites: Guideline son Significant Risk of Harm and the Duty to Report.
- NSW EPA (1999) (now NSW DECC) Environmental Guidelines: Assessment, Classification and Management of Liquid and Non-liquid Wastes.
- NSW Legislation (1948) Rivers and Foreshores Improvement Act.
- NSW Legislation (1975) Dangerous Goods Act.
- NSW Legislation (1994) Environmental Planning and Assessment Act (EP&AA) and associated Regulations.
- NSW Legislation (1997) Contaminated Land Management Act.
- NSW Legislation (1997) Protection of the Environment Operations Act No156 which includes Schedule 2 of the Clean Waters Regulations 1972 made under the Clean Waters Act (1970).
- NSW Legislation (2000) Occupational Health and Safety Act.
- NSW Regulation (2001) Occupation Health and Safety Regulation.
- NSW Regulation (1999) Abandoning Underground Storage Tanks for Flammable and Combustible Liquids (Ref: DG310 October 1999).
- NSW WorkCover (2003) Your Guide to Working With Asbestos: Safety Guidelines and Requirements for Work Involving Asbestos.
- NSW WorkCover Code of Practice (2005) Storage and Handling of Dangerous Goods.
- US EPA (2004) Region 9 Preliminary Remediation Goals.

TABLE A-1
ENVIRONMENTAL AND HEALTH-BASED SOIL INVESTIGATION LEVELS (mg/kg)

Substances	Health Investigation Levels (HILs)[1]				Interim Urban Ecological Investigation Levels (EILs)[1]	NSW EPA Guidelines for Assessing Service Station Sites[2]	Back-ground Ranges[1]
	A	D	E	F			
	'Standard' residential with garden/ accessible soil (home-grown produce contributing less than 10% of vegetable and fruit intake; no poultry); includes children's day-care centres, kindergartens, preschools and primary schools	Residential with minimal opportunities for soil access: includes dwellings with fully and permanently paved yard space such as high-rise apartments and flats	Parks, recreational open space and playing fields: includes secondary schools	Commercial/industrial: includes premises such as shops and offices as well as factories and industrial sites			
METALS/METALLOIDS							
Arsenic (total)	100	400	200	500	20		1-50
Barium					300		100-3000
Beryllium	20	80	40	100			
Cadmium	20	80	40	100	3		1
Chromium(III)	12%	48%	24%	60%	400		
Chromium(VI)	100	400	200	500	1		
Chromium (total)							5-1000
Cobalt	100	400	200	500			1-40
Copper	1000	4000	2000	5000	100		2-100
Lead	300	1200	600	1500	600		2-200
Manganese	1500	6000	3000	7500	500		850
Methyl mercury	10	40	20	50			
Mercury (inorganic)	15	60	30	75	1		0.03
Nickel	600	2400	600	3000	60		5-500
Vanadium					50		20-500
Zinc	7000	28000	14000	35000	200		10-300
ORGANICS							
Aldrin + Dieldrin	10	40	20	50			
Chlordane	50	200	100	250			
DDT + DDD + DDE	200	800	400	1000			
Heptachlor	10	40	20	50			
Polycyclic aromatic hydrocarbons (PAHs)	20	80	40	100			
Benzo(a)pyrene	1	4	2	5			
Phenol	8500	34000	17000	42500			
PCBs (total)	10	40	20	50			
Petroleum Hydrocarbon Components (constituents):							
>C16 - C35 Aromatics	90	360	180	450			
>C16 - C35 Aliphatics	5600	22400	11200	28000			
>C35 Aliphatics	56000	224000	112000	280000			
C6-C9						65	
C10-C40						1000	
Benzene						1	
Toluene						1.4	
Ethyl Benzene						3.1	
Total Xylenes						14	
OTHER							
Boron	3000	12000	6000	15000			
Cyanides (complexed)	500	2000	1000	2500			
Cyanides (free)	250	1000	500	1250			
Phosphorus					2000		
Sulfur					600		
Sulfate					2000		

Reference should be made to the following guidelines for further details (as referenced in the above table):

1 National Environment Protection (Assessment of Site Contamination) Measure - 1999, National Environment Protection Council. Human exposure settings based on land use have been established for HILs and details are outlined in Taylor and Langley 1998.

2 NSW DECC (formerly EPA) Guidelines for Assessing Service station Sites - 1994.

TABLE A - 2
CHEMICAL CONTAMINANT CRITERIA FOR WASTE CLASSIFICATION
ENVIRONMENTAL GUIDELINES: ASSESSMENT, CLASSIFICATION AND MANAGEMENT OF LIQUID AND NON-LIQUID WASTES - NSW EPA* 1999

INERT WASTE	SOLID WASTE	INDUSTRIAL WASTE	HAZARDOUS WASTE
IF SCC ≤ CT1, TCLP NOT NEEDED	IF SCC ≤ CT2, TCLP NOT NEEDED	IF SCC ≤ CT3, TCLP NOT NEEDED	IF TCLP > TCLP3 STORE OR TREAT AS APPROPRIATE
IF TCLP ≤ TCLP1 AND SCC ≤ SCC1 TREAT AS INERT WASTE	IF TCLP1 < TCLP ≤ TCLP2 AND SCC ≤ SCC2 TREAT AS SOLID WASTE	IF TCLP2 < TCLP ≤ TCLP3 AND SCC ≤ SCC3 OR IF TCLP ≤ TCLP3 AND SCC2 < SCC ≤ SCC3 TREAT AS INDUSTRIAL WASTE	
IF TCLP ≤ TCLP1 AND SCC > SCC1, IMMOBILISE (EPA APPROVED METHOD) OR RECLASSIFY WASTE	IF TCLP1 < TCLP ≤ TCLP2 AND SCC > SCC2, IMMOBILISE (EPA APPROVED METHOD) OR RECLASSIFY WASTE	IF TCLP2 < TCLP ≤ TCLP3 AND SCC > SCC3, IMMOBILISE (EPA APPROVED METHOD) OR RECLASSIFY WASTE	IF TCLP ≤ TCLP3 AND SCC > SCC3 AND IMMOBILISATION NOT EPA APPROVED, STORE OF TREAT WASTE AS APPROPRIATE

	INERT WASTE			SOLID WASTE			INDUSTRIAL WASTE		
CONTAMINANT	CT1 (mg/kg)	TCLP1 (mg/L)	SCC1 (mg/kg)	CT2 (mg/kg)	TCLP2 (mg/L)	SCC2 (mg/kg)	CT3 (mg/kg)	TCLP3 (mg/L)	SCC3 (mg/kg)
Arsenic	10	0.5	500	100	5[3]	500	400	20	2,000
Beryllium	2	0.1	100	20	1.0[10]	100	80	4	400
Cadmium	2	0.1	100	20	1.0[3]	100	80	4	400
Chromium (total)[5]	10	0.5	1,900	100	5[3]	1,900	400	20	7,600
Cyanide (total)[6]	32[2]	1.6	5,900	320	16	5,900	1280	64	23,600
Cyanide (Amenable)[6,8]	7[7]	0.35	300	70	3.5	300	280	14	1,200
Fluoride	300	15	10,000	3,000	150[4]	10,000	12,000	600	40,000
Lead	10	0.5	1,500	100	5[3]	1,500	400	20	6,000
Mercury	0.4	0.02	50	4	0.2[3]	50	16	0.8	200
Molybdenum	10	0.5	1,000	100	5[4]	1,000	400	20	4,000
Nickel	4	0.2	1,050	40	2[4]	1,050	160	8	4,200
Selenium	2	0.1	50	20	1[3]	50	80	4	200
Silver	10	0.5	180	100	5.0[3]	180	400	20	720
Benzene	1.0	0.05	18	10	0.5[3]	18	40	2	72
Toluene	28.8	1.44	518	288	14.4[3]	518	1,152	57.6	2,073
Ethylbenzene	60	3	1,080	600	30[6]	1,080	2,400	120	4,320
Total xylenes	100	5	1,800	1,000	50[14]	1,800	4,000	200	7,200
Total petroleum hydrocarbons (C6-C9)[11,13]	-	-	650	-	-	650	-	-	2,600
Total petroleum hydrocarbons (C10-C36)[11,13] (C10-C14, C15-C28, C29-C36)	-	-	5,000	-	-	10,000	-	-	40,000
Benzo(a)pyrene[4]	0.08	0.004	1	0.8	0.04[5]	10	3.2	0.16	23
Polycyclic aromatic hydrocarbons (Total)[4,11,12]	-	-	200	-	-	200	-	-	800
Polychlorinated biphenyls[8]	-	-	2	-	-	< 50	-	-	< 50
Phenol (nonhalogenated)	28.8	1.44	518	288	14.4[13]	518	1,152	57.6	2,073
Scheduled chemicals[7,8]	-	-	1	-	-	< 50	-	-	< 50

* NSW EPA is now a unit with the NSW Department of Environment and Climate Change

Proposed Residential Complex
Potential Site Contamination
Lane Cove Road, Epping Road & Allengrove Crescent

EIS

TABLE B
SUMMARY OF LABORATORY TEST DATA
CHEMICAL TEST DATA - SOILS
All data in mg/kg unless stated otherwise

ANALYTE	Sample Description	HEAVY METALS								PAHs		ORGANOCHLORINE PESTICIDES					PETROLEUM HYDROCARBONS								Asbestos Fibres
		Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	Total PAHs	B(a)P	Aldrin and Dieldrin	Chlordane	DDT, DDD & DDE	Heptachlor	PCBs	Total Petroleum Hydrocarbons C_6-C_9	C_{10}-C_{14}	C_{15}-C_{28}	C_{29}-C_{36}	Benzene	Toluene	Ethyl Benzene	Total Xylenes	
PQL - Envirolab Services		4.0	1.0	1.0	1.0	1.0	0.1	1.0	1.0	-	0.05	0.1	0.1	0.1	0.1	0.1	25	50	100	100	1.0	1.0	1.0	3.0	
Guideline concentration-HIL *		100	20	12%	1000	300	15	600	7000	20	1	10	50	200	10	10	65		1000		1	4.1	3.1	14	
Guideline concentration -EIL *		20	3	400	100	600	1	60	200	na	na	na	na	na	na	na	na	na	na	na	na	na	na	na	
SAMPLE (Depth in metres)																									
BH1 (0.0-0.1)	Fill	LPQL	LPQL	32	42	53	0.25	***66***	69	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH2 (0.0-0.1)	Fill	6.1	LPQL	150	39	100	0.24	4.9	160	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH3 (0.0-0.1)	Fill	14	LPQL	33	15	87	0.27	6.4	79	7.5	0.5	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH4 (0.0-0.1)	Fill	7.5	LPQL	34	16	42	LPQL	7.8	52	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH4 (0.3-0.4)	Fill	6.5	LPQL	25	8.9	31	LPQL	3.4	35	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH5 (0.0-0.1)	Fill	***35***	LPQL	48	30	220	***2***	24	***220***	0.47	0.07	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH6 (0.0-0.1)	Fill	12	LPQL	14	21	48	0.13	5.1	83	1.5	0.2	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH7 (0.0-0.1)	Fill	7.3	LPQL	18	9.6	59	0.11	3.3	93	0.7	0.1	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	Not Detected
BH7 (0.4-0.5)	Natural	8.8	LPQL	24	8	26	LPQL	4.6	17	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	LPQL	
Total no. of samples		9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	
Maximum Value		35	0	150	42	220	2	66	220	7.5	0.5	0	0	0	0	0	0	0	0	0	0	0	0	0	

EXPLANATION:

EXPLANATION:
*: National Environment Protection (Assessment of Site Contamination) Measure 1999 (NEPC Guidelines)
HIL - Column A, Residential with accessible soils
EIL - Interim Urban Ecological Investigation Levels (EILs)
NSW DECC (EPA) Guidelines for Assessing Service Station Sites (1994)

Concentration above HIL **100**
Concentration above EIL ***100***

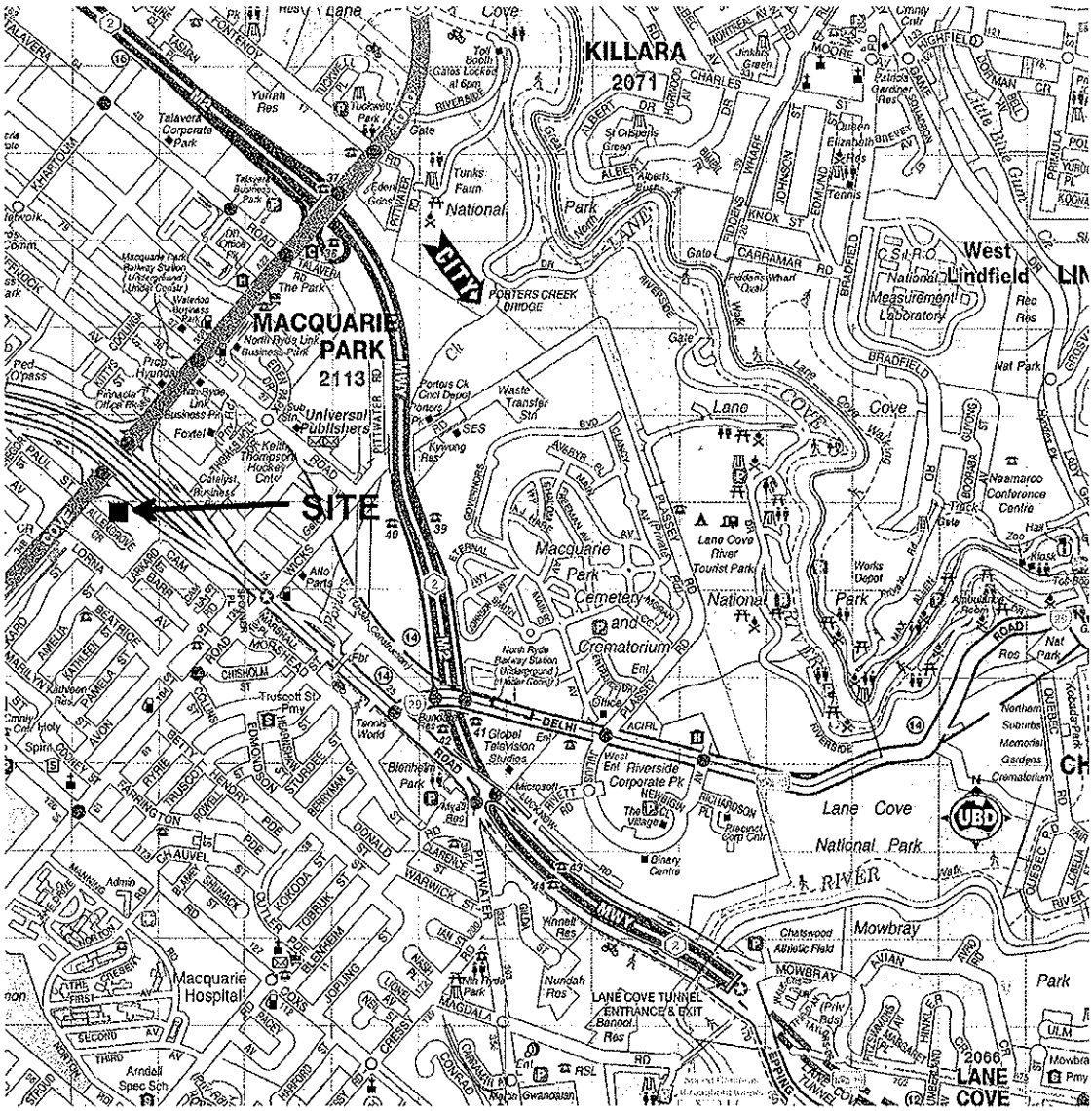
PQL: Practical Quantitation Limit
LPQL: Less than PQL
na: Not Analysed

Job Ref:E21874FJ
Date:13/2/08

TABLE C
SOIL INTRA LABORATORY DUPLICATE RESULTS
QA/QC - RELATIVE PERCENTAGE DIFFERENCES

SAMPLE	ANALYSIS	INITIAL (mg/kg)	REPEAT (mg/kg)	MEAN (mg/kg)	RPD %
Intra-laboratory	Arsenic	8.8	10	9.4	13
Soil	Cadmium	LPQL	LPQL	NC	NC
BH7 (0.4-0.5)	Chromium	24	27	25.5	12
	Copper	8	14	11	55
DUP 1	Lead	26	30	28	14
	Mercury	LPQL	LPQL	NC	NC
	Nickel	4.6	6.1	5.35	28
Sample Date: 13/2/08	Zinc	17	23	20	30
Batch Ref:17001	Naphthalene	LPQL	LPQL	NC	NC
	Acenaphthylene	LPQL	LPQL	NC	NC
	Acenaphthene	LPQL	LPQL	NC	NC
	Fluorene	LPQL	LPQL	NC	NC
	Phenanthrene	LPQL	LPQL	NC	NC
	Anthracene	LPQL	LPQL	NC	NC
	Fluoranthene	LPQL	LPQL	NC	NC
	Pyrene	LPQL	LPQL	NC	NC
	Benzo(a)anthracene	LPQL	LPQL	NC	NC
	Chrysene	LPQL	LPQL	NC	NC
	Benzo(b)&(k)fluorant	LPQL	LPQL	NC	NC
	Benzo(a)pyrene	LPQL	LPQL	NC	NC
	Indeno(123-cd)pyrene	LPQL	LPQL	NC	NC
	Dibenzo(ah)anthracene	LPQL	LPQL	NC	NC
	Benzo(ghi)perylene	LPQL	LPQL	NC	NC
	Total PAHs	LPQL	LPQL	NC	NC
	Total DDT/DDD/DDE	LPQL	LPQL	NC	NC
	Total Chlordanes	LPQL	LPQL	NC	NC
	Aldrin + Dieldrin	LPQL	LPQL	NC	NC
	Heptachlor	LPQL	LPQL	NC	NC
	Total PCBs	LPQL	LPQL	NC	NC
	C_6-C_9 TPH	LPQL	LPQL	NC	NC
	C_{10}-C_{14} TPH	LPQL	LPQL	NC	NC
	C_{15}-C_{28} TPH	LPQL	LPQL	NC	NC
	C_{29}-C_{36} TPH	LPQL	LPQL	NC	NC
	Benzene	LPQL	LPQL	NC	NC
	Toluene	LPQL	LPQL	NC	NC
	Ethylbenzene	LPQL	LPQL	NC	NC
	Total Xylenes	LPQL	LPQL	NC	NC

REPORT REF E21874FJ
DATE 13/2/08



Recreated from UBD
Ref: 194 C7

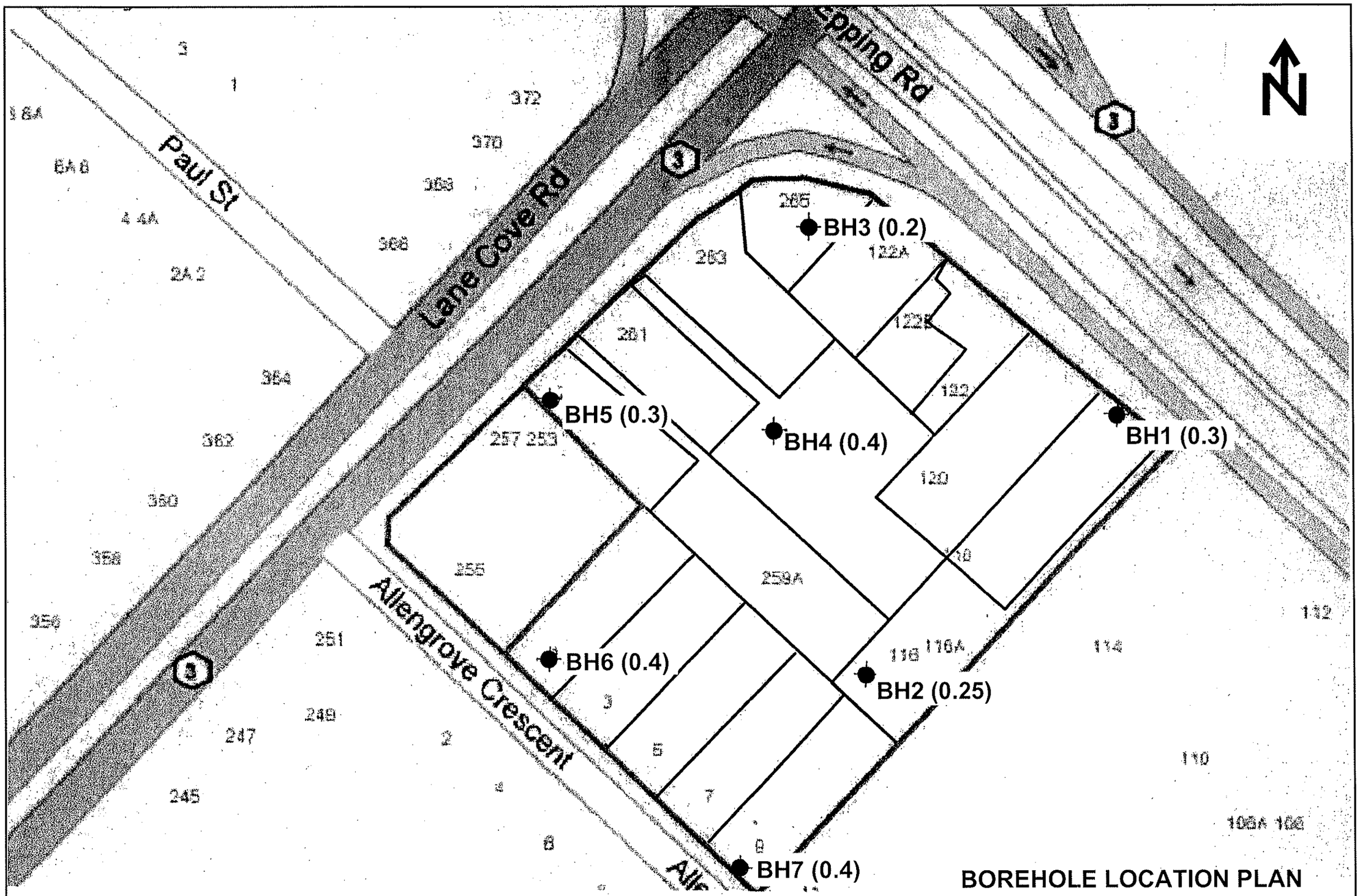
SITE LOCATION PLAN

Epping Road, Lane Cove Road
& Allengrove Crescent

ENVIRONMENTAL
INVESTIGATION
SERVICES

Job No: E21874FK
Figure: 1

Note: Reference should be made to the text for a full understa



BH1 (0.3) EIS BOREHOLE LOCATION NUMBER AND DEPTH OF FILL (M)

Note: Reference should be made to the text for a full understanding of this plan

BOREHOLE LOCATION PLAN

Lane Cove Road & Allengrove Cresent, North Ryde

EIS
ENVIRONMENTAL INVESTIGATION SERVICES

Job No: E21874FJ
Figure: 2

APPENDIX A

Jeffery and Katauskas Pty Ltd
CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 1 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
					REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty clay, high plasticity, brown, with a trace of fine to medium grained brick and ironstone gravel, and a trace of root fibres.	MC>PL			GRASS COVER
						0.5		CH	SILTY CLAY: high plasticity, red brown, with a trace of fine to medium grained ironstone gravel, and a trace of ash and root fibres.	MC>PL	St-VSt	- 120 180 220	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
						1			as above, but red brown mottled light grey brown.	MC>PL	VSt	230 280 380	
▶						1.5			SILTY CLAY: high plasticity, light grey mottled red brown.			180 220 240	
									END OF BOREHOLE AT 1.5m				
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd
CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 2 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
					REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty clay, high plasticity, dark brown, with roots and root fibres.	MC > PL			GRASS COVER
▶						0.5		CH	SILTY CLAY: high plasticity, red brown, with a trace of fine to medium grained ironstone gravel, and root fibres.	MC > PL	VSt	- 250 260 310	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
									as above, but red brown mottled light grey.				
						1			as above, but light grey mottled red brown.			350 360 360	
									SILTY CLAY: high plasticity, light grey, with XW shale gravel.				
						1.5			END OF BOREHOLE AT 1.25m				HAND AUGER REFUSAL ON INFERRED SHALE
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd

CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 3 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION					REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty clay, high plasticity, dark brown and grey, with organic matter.	MC > PL			LEAF COVER
								CH	SILTY CLAY: high plasticity, orange brown, with a trace of ash and fine grained ironstone gravel.	-	VSt	-	
						0.5						380 320 320	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
									SILTY CLAY: high plasticity, light grey mottled red brown, with a trace of fine grained ironstone gravel.	MC < PL	H	450 420 410	
						1							
						1.5			END OF BOREHOLE AT 1.5m			>600 540 580	
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd
CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. **4** 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■			■	REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty sandy clay, high plasticity, dark brown, with a trace of fine grained ironstone and sandstone gravel, root fibres and ash.	MC≈PL			GRASS COVER
				■		0.5		CH	SILTY CLAY: high plasticity, red brown mottled red brown, with a trace of ash, root fibres and fine grained ironstone gravel.	MC < PL	VSt -H	410 310 310	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
						1			as above, but light grey mottled red brown, and without ironstone gravel.		H	>600 510 510	
				■		1.5			END OF BOREHOLE AT 1.5m			410 410 450	
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd

CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

BOREHOLE LOG

Borehole No. 5 1/1

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION					REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty clay, high plasticity, dark brown, with a trace of igneous gravel.				GRASS COVER
						0.5		CH	SILTY CLAY: high plasticity, red brown mottled brown red, with a trace of ironstone gravel.	MC > PL	VSt	260 280 340	
						1			as above, but red brown mottled light grey.			320 300 240	HP TESTING CARRIED OUT ON REMOULDED CLAY
						1.5			as above, but light grey and red brown.	MC≈PL	H	510 501 410	
									as above, but with fine to medium grained ironstone gravel.				
									END OF BOREHOLE AT 1.5m				
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd

CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. 6 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■				REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty sandy clay, high plasticity, red brown, with roots and root fibres, and a trace of fine to medium grained brick and concrete fragments.	MC > PL			WOOD CHIPS COVER
	■					0.5		CH	SILTY CLAY: high plasticity, red brown, with a trace of root fibres and ash and fine to medium grained ironstone gravel.	MC > PL	VSt	320 400 380	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
				■		1			as above, but red brown mottled grey brown.				
									as above, but light grey mottled red brown, without root fibres.		VSt-H	430 380 390	
											H		
						1.5			END OF BOREHOLE AT 1.5m			500 470 470	
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd
CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS

Borehole No. **7** 1/1

BOREHOLE LOG

Client: EG FUNDS

Project: PROPOSED REDEVELOPMENT

Location: LANE COVE ROAD AND ALLENGROVE CRESCENT, NORTH RYDE, NSW

Job No. 21874Z **Method:** HAND AUGER **R.L. Surface:** N/A

Date: 13-2-08 **Datum:**

Logged/Checked by: M.P./

Groundwater Record	SAMPLES ES	SAMPLES U50	SAMPLES DB	SAMPLES DS	Field Tests	Depth (m)	Graphic Log	Unified Classification	DESCRIPTION	Moisture Condition/ Weathering	Strength/ Rel. Density	Hand Penetrometer Readings (kPa.)	Remarks
DRY ON COMPLETION	■				REFER TO DCP TEST RESULTS	0			TOPSOIL: Silty clay, high plasticity, dark brown, with a trace of fine to medium grained iron indurated shale, sandstone and roots and root fibres.	MC > PL			GRASS COVER
	■					0.5		CH	SILTY CLAY: high plasticity, red brown mottled dark grey, with a trace of ironstone gravel.	MC > PL	VSt	280 280 260	HP TESTING CARRIED OUT ON REMOULDED SAMPLES
				■					as above, but red brown mottled light grey, with a trace of ash.				
						1			as above, but light grey mottled red brown.			340 350 400	
										MC≈PL			INSUFFICIENT CLAY RECOVERED FOR HP TESTING
									END OF BOREHOLE AT 1.35m				HAND AUGER REFUSAL ON INFERRED SHALE
						1.5							
						2							
						2.5							
						3							
						3.5							

Jeffery and Katauskas Pty Ltd

CONSULTING GEOTECHNICAL AND ENVIRONMENTAL ENGINEERS
ABN 17 003 550 801

REPORT EXPLANATION NOTES

INTRODUCTION

These notes have been provided to amplify the geotechnical report in regard to classification methods, field procedures and certain matters relating to the Comments and Recommendations section. Not all notes are necessarily relevant to all reports.

The ground is a product of continuing natural and man-made processes and therefore exhibits a variety of characteristics and properties which vary from place to place and can change with time. Geotechnical engineering involves gathering and assimilating limited facts about these characteristics and properties in order to understand or predict the behaviour of the ground on a particular site under certain conditions. This report may contain such facts obtained by inspection, excavation, probing, sampling, testing or other means of investigation. If so, they are directly relevant only to the ground at the place where and time when the investigation was carried out.

DESCRIPTION AND CLASSIFICATION METHODS

The methods of description and classification of soils and rocks used in this report are based on Australian Standard 1726, the SAA Site Investigation Code. In general, descriptions cover the following properties – soil or rock type, colour, structure, strength or density, and inclusions. Identification and classification of soil and rock involves judgement and the Company infers accuracy only to the extent that is common in current geotechnical practice.

Soil types are described according to the predominating particle size and behaviour as set out in the attached Unified Soil Classification Table qualified by the grading of other particles present (eg sandy clay) as set out below:

Soil Classification	Particle Size
Clay	less than 0.002mm
Silt	0.002 to 0.06mm
Sand	0.06 to 2mm
Gravel	2 to 60mm

Non-cohesive soils are classified on the basis of relative density, generally from the results of Standard Penetration Test (SPT) as below:

Relative Density	SPT 'N' Value (blows/300mm)
Very loose	less than 4
Loose	4 – 10
Medium dense	10 – 30
Dense	30 – 50
Very Dense	greater than 50

Cohesive soils are classified on the basis of strength (consistency) either by use of hand penetrometer, laboratory testing or engineering examination. The strength terms are defined as follows.

Classification	Unconfined Compressive Strength kPa
Very Soft	less than 25
Soft	25 – 50
Firm	50 – 100
Stiff	100 – 200
Very Stiff	200 – 400
Hard	Greater than 400
Friable	Strength not attainable – soil crumbles

Rock types are classified by their geological names, together with descriptive terms regarding weathering, strength, defects, etc. Where relevant, further information regarding rock classification is given in the text of the report. In the Sydney Basin, 'Shale' is used to describe thinly bedded to laminated siltstone.

SAMPLING

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

Disturbed samples taken during drilling provide information on plasticity, grain size, colour, moisture content, minor constituents and, depending upon the degree of disturbance, some information on strength and structure. Bulk samples are similar but of greater volume required for some test procedures.

Undisturbed samples are taken by pushing a thin-walled sample tube, usually 50mm diameter (known as a U50), into the soil and withdrawing it with a sample of the soil contained 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.

Details of the type and method of sampling used are given on the attached logs.

INVESTIGATION METHODS

The following is a brief summary of investigation methods currently adopted by the Company and some comments on their use and application. All except test pits, hand auger drilling and portable dynamic cone penetrometers require the use of a mechanical drilling rig which is commonly mounted on a truck chassis.

Test Pits: These are normally excavated with a backhoe or a tracked excavator, allowing close examination of the insitu soils if it is safe to descend into the pit. The depth of penetration is limited to about 3m for a backhoe and up to 6m for an excavator. Limitations of test pits are the problems associated with disturbance and difficulty of reinstatement and the consequent effects on close-by structures. Care must be taken if construction is to be carried out near test pit locations to either properly recompact the backfill during construction or to design and construct the structure so as not to be adversely affected by poorly compacted backfill at the test pit location.

Hand Auger Drilling: A borehole of 50mm to 100mm diameter is advanced by manually operated equipment. Premature refusal of the hand augers can occur on a variety of materials such as hard clay, gravel or ironstone, and does not necessarily indicate rock level.

Continuous Spiral Flight Augers: The borehole is advanced using 75mm to 115mm diameter continuous spiral flight augers, which are withdrawn at intervals to allow sampling and insitu testing. This is a relatively economical means of drilling in clays and in sands above the water table. Samples are returned to the surface by the flights or may be collected after withdrawal of the auger flights, but they can be very disturbed and layers may become mixed. Information from the auger sampling (as distinct from specific sampling by SPTs or undisturbed samples) is of relatively lower reliability due to mixing or softening of samples by groundwater, or uncertainties as to the original depth of the samples. Augering below the groundwater table is of even lesser reliability than augering above the water table.

Rock Augering: Use can be made of a Tungsten Carbide (TC) bit for auger drilling into rock to indicate rock quality and continuity by variation in drilling resistance and from examination of recovered rock fragments. This method of investigation is quick and relatively inexpensive but provides only an indication of the likely rock strength and predicted values may be in error by a strength order. Where rock strengths may have a significant impact on construction feasibility or costs, then further investigation by means of cored boreholes may be warranted.

Wash Boring: The borehole is usually advanced by a rotary bit, with water 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 "feel" and rate of penetration.

Mud Stabilised Drilling: Either Wash Boring or Continuous Core Drilling can use drilling mud as a circulating fluid to stabilise the borehole. The term 'mud' encompasses a range of products ranging from bentonite to polymers such as Revert or Biogel. The mud tends to mask the cuttings and reliable identification is only possible from intermittent intact sampling (eg from SPT and U50 samples) or from rock coring, etc.

Continuous Core Drilling: A continuous core sample is obtained using a diamond tipped core barrel. Provided full core recovery is achieved (which is not always possible in very low strength rocks and granular soils), this technique provides a very reliable (but relatively expensive) method of investigation. In rocks, an NMLC triple tube core barrel, which gives a core of about 50mm diameter, is usually used with water flush. The length of core recovered is compared to the length drilled and any length not recovered is shown as CORE LOSS. The location of losses are determined on site by the supervising engineer; where the location is uncertain, the loss is placed at the top end of the drill run.

Standard Penetration Tests: Standard Penetration Tests (SPT) are used mainly in non-cohesive soils, but can also be used in cohesive soils as a means of indicating density or strength 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 F3.1.

The test is carried out in a borehole by driving a 50mm diameter split sample tube with a tapered shoe, under the impact of a 63kg hammer with a free fall of 760mm. It is normal for the tube to be driven in three successive 150mm increments and the 'N' value is taken as the number of blows for the last 300mm. In dense sands, very hard clays or weak rock, the full 450mm 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 150mm of, say, 4, 6 and 7 blows, as

  N = 13
  4, 6, 7

- In a case where the test is discontinued short of full penetration, say after 15 blows for the first 150mm and 30 blows for the next 40mm, as

  N>30
  15, 30/40mm

The results of the test can be related empirically to the engineering properties of the soil.

Occasionally, the drop hammer is used to drive 50mm diameter thin walled sample tubes (U50) in clays. In such circumstances, the test results are shown on the borehole logs in brackets.

A modification to the SPT test is where the same driving system is used with a solid 60° tipped steel cone of the same diameter as the SPT hollow sampler. The solid cone can be continuously driven for some distance in soft clays or loose sands, or may be used where damage would otherwise occur to the SPT. The results of this Solid Cone Penetration Test (SCPT) are shown as "N_c" on the borehole logs, together with the number of blows per 150mm penetration.

Static Cone Penetrometer Testing and Interpretation: Cone penetrometer testing (sometimes referred to as a Dutch Cone) described in this report has been carried out using an Electronic Friction Cone Penetrometer (EFCP). The test is described in Australian Standard 1289, Test F5.1.

In the tests, a 35mm diameter rod with a conical tip is pushed continuously into the soil, the reaction being provided by a specially designed truck or rig which is fitted with an hydraulic ram system. Measurements are made of the end bearing resistance on the cone and the frictional resistance on a separate 134mm long sleeve, immediately behind the cone. Transducers in the tip of the assembly are electrically connected by wires passing through the centre of the push rods to an amplifier and recorder unit mounted on the control truck.

As penetration occurs (at a rate of approximately 20mm per second) the information is output as incremental digital records every 10mm. The results given in this report have been plotted from the digital data.

The information provided on the charts comprise:

- Cone resistance – the actual end bearing force divided by the cross sectional area of the cone – expressed in MPa.
- Sleeve friction – the frictional force on the sleeve divided by the surface area – expressed in kPa.
- Friction ratio – the ratio of sleeve friction to cone resistance, expressed as a percentage.

The ratios of the sleeve resistance to cone resistance will vary with the type of soil encountered, with higher relative friction in clays than in sands. Friction ratios of 1% to 2% are commonly encountered in sands and occasionally very soft clays, rising to 4% to 10% in stiff clays and peats. Soil descriptions based on cone resistance and friction ratios are only inferred and must not be considered as exact.

Correlations between EFCP and SPT values can be developed for both sands and clays but may be site specific.

Interpretation of EFCP values can be made to empirically derive modulus or compressibility values to allow calculation of foundation settlements.

Stratification can be inferred from the cone and friction traces and from experience and information from nearby boreholes etc. Where shown, this information is presented for general guidance, but must be regarded as interpretive. The test method provides a continuous profile of engineering properties but, where precise information on soil classification is required, direct drilling and sampling may be preferable.

Portable Dynamic Cone Penetrometers: Portable Dynamic Cone Penetrometer (DCP) tests are carried out by driving a rod into the ground with a sliding hammer and counting the blows for successive 100mm increments of penetration.

Two relatively similar tests are used:

- Cone penetrometer (commonly known as the Scala Penetrometer) – a 16mm rod with a 20mm diameter cone end is driven with a 9kg hammer dropping 510mm (AS1289, Test F3.2). The 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.
- Perth sand penetrometer – a 16mm diameter flat ended rod is driven with a 9kg hammer, dropping 600mm (AS1289, Test F3.3). This test was developed for testing the density of sands (originating in Perth) and is mainly used in granular soils and filling.

LOGS

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

The attached explanatory notes define the terms and symbols used in preparation of the logs.

Interpretation of the information shown on the logs, and its application to design and construction, should therefore take into account the spacing of boreholes or test pits, the method of drilling or excavation, the frequency of sampling and testing and the possibility of other than "straight line" variations between the boreholes or test pits. Subsurface conditions between boreholes or test pits may vary significantly from conditions encountered at the borehole or test pit locations.

GROUNDWATER

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

- Although groundwater may be present, in low permeability soils it may enter the hole slowly or perhaps not at all during the time it 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 and may not be the same at the time of construction.
- 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 be washed out of the hole or 'reverted' chemically if water observations are to be made.

More reliable measurements can be made by installing standpipes which are read after stabilising at intervals ranging from several days to 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 perched water tables or surface water.

FILL

The presence of fill materials can often be determined only by the inclusion of foreign objects (eg bricks, steel etc) or by distinctly unusual colour, texture or fabric. Identification of the extent of fill materials will also depend on investigation methods and frequency. Where natural soils similar to those at the site are used for fill, it may be difficult with limited testing and sampling to reliably determine the extent of the fill.

The presence of fill materials is usually regarded with caution as the possible variation in density, strength and material type is much greater than with natural soil deposits. Consequently, there is an increased risk of adverse engineering characteristics or behaviour. If the volume and quality of fill is of importance to a project, then frequent test pit excavations are preferable to boreholes.

LABORATORY TESTING

Laboratory testing is normally carried out in accordance with Australian Standard 1289 *'Methods of Testing Soil for Engineering Purposes'*. Details of the test procedure used are given on the individual report forms.

ENGINEERING REPORTS

Engineering reports are prepared by qualified personnel and are based on the information obtained and on current engineering standards of interpretation and analysis. Where the report has been prepared for a specific design proposal (eg. a three storey building) the information and interpretation may not be relevant if the design proposal is changed (eg to a twenty storey building). If this happens, the company 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 aspects and recommendations or suggestions for design and construction. However, the Company cannot always anticipate or assume responsibility for:

- Unexpected variations in ground conditions – the potential for this will be partially dependent on borehole spacing and sampling frequency as well as investigation technique.
- Changes in policy or interpretation of policy by statutory authorities.
- The actions of persons or contractors responding to commercial pressures.

If these occur, the company will be pleased to assist with investigation or advice to resolve any problems occurring.

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, the company requests that it immediately be notified. Most problems are much more readily resolved when conditions are exposed that at some later stage, well after the event.

REPRODUCTION OF INFORMATION FOR CONTRACTUAL PURPOSES

Attention is drawn to the document *'Guidelines for the Provision of Geotechnical Information in Tender Documents'*, published by the Institution of Engineers, Australia. Where information obtained from this investigation 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. The company would be pleased to assist in this regard and/or to make additional report copies available for contract purposes at a nominal charge.

Copyright in all documents (such as drawings, borehole or test pit logs, reports and specifications) provided by the Company shall remain the property of Jeffery and Katauskas Pty Ltd. Subject to the payment of all fees due, the Client alone shall have a licence to use the documents provided for the sole purpose of completing the project to which they relate. License to use the documents may be revoked without notice if the Client is in breach of any objection to make a payment to us.

REVIEW OF DESIGN

Where major civil or structural developments are proposed or where only a limited investigation has been completed or where the geotechnical conditions/ constraints are quite complex, it is prudent to have a joint design review which involves a senior geotechnical engineer.

SITE INSPECTION

The company will always be pleased to provide engineering inspection services for geotechnical aspects of work to which this report is related.

Requirements could range from:

i) a site visit to confirm that conditions exposed are no worse than those interpreted, to

ii) a visit to assist the contractor or other site personnel in identifying various soil/rock types such as appropriate footing or pier founding depths, or

iii) full time engineering presence on site.

Jeffery and Katauskas Pty Ltd
CONSULTING GEOTECHNICAL & ENVIRONMENTAL ENGINEERS

GRAPHIC LOG SYMBOLS FOR SOILS AND ROCKS

SOIL


FILL


TOPSOIL


CLAY (CL, CH)


SILT (ML, MH)


SAND (SP, SW)


GRAVEL (GP, GW)


SANDY CLAY (CL, CH)


SILTY CLAY (CL, CH)


CLAYEY SAND (SC)


SILTY SAND (SM)


GRAVELLY CLAY (CL, CH)


CLAYEY GRAVEL (GC)


SANDY SILT (ML)


PEAT AND ORGANIC SOILS

ROCK


CONGLOMERATE


SANDSTONE


SHALE


SILTSTONE, MUDSTONE, CLAYSTONE


LIMESTONE


PHYLLITE, SCHIST


TUFF


GRANITE, GABBRO


DOLERITE, DIORITE


BASALT, ANDESITE


QUARTZITE

DEFECTS AND INCLUSIONS


CLAY SEAM


SHEARED OR CRUSHED SEAM


BRECCIATED OR SHATTERED SEAM/ZONE


IRONSTONE GRAVEL


ORGANIC MATERIAL

OTHER MATERIALS


CONCRETE


BITUMINOUS CONCRETE, COAL


COLLUVIUM

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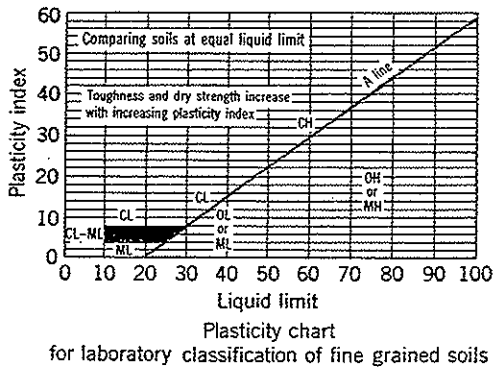
UNIFIED SOIL CLASSIFICATION TABLE

Field Identification Procedures (Excluding particles larger than 75 μm and basing fractions on estimated weights)						Group Symbols[a]	Typical Names	Information Required for Describing Soils	Laboratory Classification Criteria
Coarse-grained soils More than half of material is *larger* than 75 μm sieve size[b] (The smallest particle visible to naked eye)	Gravels More than half of coarse fraction is larger than 4 mm sieve size	Clean gravels (little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes			*GW*	Well graded gravels, gravel-sand mixtures, little or no fines	Give typical name; indicate approximate percentages of sand and gravel; maximum size; angularity, surface condition, and hardness of the coarse grains; local or geologic name and other pertinent descriptive information; and symbols in parentheses For undisturbed soils add information on stratification, degree of compactness, cementation, moisture conditions and drainage characteristics Example: *Silty sand*, gravelly; about 20% hard, angular gravel particles 12 mm maximum size; rounded and subangular sand grains coarse to fine, about 15% non-plastic fines with low dry strength; well compacted and moist in place; alluvial sand; (*SM*)	Determine percentages of gravel and sand from grain size curve. Depending on percentage of fines (fraction smaller than 75 μm sieve size) coarse grained soils are classified as follows: Less than 5% — *GW, GP, SW, SP* More than 12% — *GM, GC, SM, SC* 5% to 12% — *Borderline* cases requiring use of dual symbols Use grain size curve in identifying the fractions as given under field identification $C_U = \frac{D_{60}}{D_{10}}$ Greater than 4 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *GW* Atterberg limits below "A" line, or *PI* less than 4 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits above "A" line, with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*GP*	Poorly graded gravels, gravel-sand mixtures, little or no fines		
		Gravels with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures see *ML* below)			*GM*	Silty gravels, poorly graded gravel-sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*GC*	Clayey gravels, poorly graded gravel-sand-clay mixtures		
	Sands More than half of coarse fraction is smaller than 4 mm sieve size	Clean sands (little or no fines)	Wide range in grain sizes and substantial amounts of all intermediate particle sizes			*SW*	Well graded sands, gravelly sands, little or no fines		$C_U = \frac{D_{60}}{D_{10}}$ Greater than 6 $C_C = \frac{(D_{30})^2}{D_{10} \times D_{60}}$ Between 1 and 3 Not meeting all gradation requirements for *SW* Atterberg limits below "A" line or *PI* less than 5 — Above "A" line with *PI* between 4 and 7 are *borderline* cases requiring use of dual symbols Atterberg limits below "A" line with *PI* greater than 7
			Predominantly one size or a range of sizes with some intermediate sizes missing			*SP*	Poorly graded sands, gravelly sands, little or no fines		
		Sands with fines (appreciable amount of fines)	Nonplastic fines (for identification procedures, see *ML* below)			*SM*	Silty sands, poorly graded sand-silt mixtures		
			Plastic fines (for identification procedures, see *CL* below)			*SC*	Clayey sands, poorly graded sand-clay mixtures		
Fine-grained soils More than half of material is *smaller* than 75 μm sieve size (The 75 μm sieve size is about the smallest particle visible to naked eye)	Identification Procedures on Fraction Smaller than 380 μm Sieve Size		Dry Strength (crushing characteristics)	Dilatancy (reaction to shaking)	Toughness (consistency near plastic limit)				
	Silts and clays liquid limit less than 50		None to slight	Quick to slow	None	*ML*	Inorganic silts and very fine sands, rock flour, silty or clayey fine sands with slight plasticity	Give typical name; indicate degree and character of plasticity, amount and maximum size of coarse grains; colour in wet condition, odour if any, local or geologic name, and other pertinent descriptive information, and symbol in parentheses For undisturbed soils add information on structure, stratification, consistency in undisturbed and remoulded states, moisture and drainage conditions Example: *Clayey silt*, brown; slightly plastic; small percentage of fine sand; numerous vertical root holes; firm and dry in place; loess; (*ML*)	
			Medium to high	None to very slow	Medium	*CL*	Inorganic clays of low to medium plasticity, gravelly clays, sandy clays, silty clays, lean clays		
			Slight to medium	Slow	Slight	*OL*	Organic silts and organic silt-clays of low plasticity		
	Silts and clays liquid limit greater than 50		Slight to medium	Slow to none	Slight to medium	*MH*	Inorganic silts, micaceous or diatomaceous fine sandy or silty soils, elastic silts		
			High to very high	None	High	*CH*	Inorganic clays of high plasticity, fat clays		
			Medium to high	None to very slow	Slight to medium	*OH*	Organic clays of medium to high plasticity		
Highly Organic Soils			Readily identified by colour, odour, spongy feel and frequently by fibrous texture			*Pt*	Peat and other highly organic soils		



Plasticity chart
for laboratory classification of fine grained soils

NOTE: 1) Soils possessing characteristics of two groups are designated by combinations of group symbols (e.g. GW-GC, well graded gravel-sand mixture with clay fines).

2) Soils with liquid limits of the order of 35 to 50 may be visually classified as being of medium plasticity.

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LOG SYMBOLS

LOG COLUMN	SYMBOL	DEFINITION
Groundwater Record		Standing water level. Time delay following completion of drilling may be shown.
		Extent of borehole collapse shortly after drilling.
		Groundwater seepage into borehole or excavation noted during drilling or excavation.
Samples	ES	Soil sample taken over depth indicated, for environmental analysis.
	U50	Undisturbed 50mm diameter tube sample taken over depth indicated.
	DB	Bulk disturbed sample taken over depth indicated.
	DS	Small disturbed bag sample taken over depth indicated.
	ASB	Soil sample taken over depth indicated, for asbestos screening.
	ASS	Soil sample taken over depth indicated, for acid sulfate soil analysis.
	SAL	Soil sample taken over depth indicated, for salinity analysis.
Field Tests	N = 17 4, 7, 10	Standard Penetration Test (SPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration. 'R' as noted below.
	N_c = 5 7 3R	Solid Cone Penetration Test (SCPT) performed between depths indicated by lines. Individual figures show blows per 150mm penetration for 60 degree solid cone driven by SPT hammer. 'R' refers to apparent hammer refusal within the corresponding 150mm depth increment.
	VNS = 25	Vane shear reading in kPa of Undrained Shear Strength.
	PID = 100	Photoionisation detector reading in ppm (Soil sample headspace test).
Moisture Condition (Cohesive Soils)	MC>PL	Moisture content estimated to be greater than plastic limit.
	MC≈PL	Moisture content estimated to be approximately equal to plastic limit.
	MC<PL	Moisture content estimated to be less than plastic limit.
(Cohesionless Soils)	D	DRY - runs freely through fingers.
	M	MOIST - does not run freely but no free water visible on soil surface.
	W	WET - free water visible on soil surface.
Strength (Consistency) Cohesive Soils	VS	VERY SOFT - Unconfined compressive strength less than 25kPa
	S	SOFT - Unconfined compressive strength 25-50kPa
	F	FIRM - Unconfined compressive strength 50-100kPa
	St	STIFF - Unconfined compressive strength 100-200kPa
	VSt	VERY STIFF - Unconfined compressive strength 200-400kPa
	H	HARD - Unconfined compressive strength greater than 400kPa
	( )	Bracketed symbol indicates estimated consistency based on tactile examination or other tests.
Density Index/ Relative Density (Cohesionless Soils)		**Density Index (I_D) Range (%)** / **SPT 'N' Value Range (Blows/300mm)**
	VL	Very Loose: <15 / 0-4
	L	Loose: 15-35 / 4-10
	MD	Medium Dense: 35-65 / 10-30
	D	Dense: 65-85 / 30-50
	VD	Very Dense: >85 / >50
	( )	Bracketed symbol indicates estimated density based on ease of drilling or other tests.
Hand Penetrometer Readings	300 250	Numbers indicate individual test results in kPa on representative undisturbed material unless noted otherwise.
Remarks	'V' bit	Hardened steel 'V' shaped bit.
	'TC' bit	Tungsten carbide wing bit.
	T 60	Penetration of auger string in mm under static load of rig applied by drill head hydraulics without rotation of augers.

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ABN 17 003 550 801

LOG SYMBOLS

ROCK MATERIAL WEATHERING CLASSIFICATION

TERM	SYMBOL	DEFINITION
Residual Soil	RS	Soil developed on extremely weathered rock; the mass structure and substance fabric are no longer evident; there is a large change in volume but the soil has not been significantly transported.
Extremely weathered rock	XW	Rock is weathered to such an extent that it has "soil" properties, ie it either disintegrates or can be remoulded, in water.
Distinctly weathered rock	DW	Rock strength usually changed by weathering. The rock may be highly discoloured, usually by ironstaining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores.
Slightly weathered rock	SW	Rock is slightly discoloured but shows little or no change of strength from fresh rock.
Fresh rock	FR	Rock shows no sign of decomposition or staining.

ROCK STRENGTH

Rock strength is defined by the Point Load Strength Index (Is 50) and refers to the strength of the rock substance in the direction normal to the bedding. The test procedure is described by the International Journal of Rock Mechanics, Mining, Science and Geomechanics. Abstract Volume 22, No 2, 1985.

TERM	SYMBOL	Is (50) MPa	FIELD GUIDE
Extremely Low:	EL	0.03	Easily remoulded by hand to a material with soil properties.
Very Low:	VL	0.1	May be crumbled in the hand. Sandstone is "sugary" and friable.
Low:	L	0.3	A piece of core 150mm long x 50mm dia. may be broken by hand and easily scored with a knife. Sharp edges of core may be friable and break during handling.
Medium Strength:	M	1	A piece of core 150mm long x 50mm dia. can be broken by hand with difficulty. Readily scored with knife.
High:	H	3	A piece of core 150mm long x 50mm dia. core cannot be broken by hand, can be slightly scratched or scored with knife; rock rings under hammer.
Very High:	VH	10	A piece of core 150mm long x 50mm dia. may be broken with hand-held pick after more than one blow. Cannot be scratched with pen knife; rock rings under hammer.
Extremely High:	EH		A piece of core 150mm long x 50mm dia. is very difficult to break with hand-held hammer. Rings when struck with a hammer.

ABBREVIATIONS USED IN DEFECT DESCRIPTION

ABBREVIATION	DESCRIPTION	NOTES
Be	Bedding Plane Parting	Defect orientations measured relative to the normal to the long core axis (ie relative to horizontal for vertical holes)
CS	Clay Seam	
J	Joint	
P	Planar	
Un	Undulating	
S	Smooth	
R	Rough	
IS	Ironstained	
XWS	Extremely Weathered Seam	
Cr	Crushed Seam	
60t	Thickness of defect in millimetres	

APPENDIX B

Envirolab Services Pty Ltd
ABN 37 112 535 645
54 Frenchs Rd Willoughby NSW 2068
ph 02 9958 5801 fax 02 9958 5803
email: tnotaras@envirolabservices.com.au

CERTIFICATE OF ANALYSIS 17001

Client:
Environmental Investigation Services
PO Box 976
North Ryde BC
NSW 1670

Attention: Rose Healy

Sample log in details:

Your Reference:	**E21874FJ, North Ryde**
No. of samples:	18 Soils
Date samples received:	14/02/08
Date completed instructions received:	14/02/08

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:	21/02/08
Date of Preliminary Report:	Not issued
Issue Date:	18/02/08

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

Results Approved By:

Jacinta Hurst
Operations Manager

Joshua Lim
Chemist

vTPH & BTEX in Soil						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	102	94	95	70	93

vTPH & BTEX in Soil						
Our Reference:	UNITS	17001-10	17001-12	17001-15	17001-17	17001-18
Your Reference	----------	BH5	BH6	BH7	BH7	Dup1
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.4-0.5	-
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
vTPH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
m + p-Xylene	mg/kg	<2.0	<2.0	<2.0	<2.0	<2.0
o-Xylene	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Surrogate aaa-Trifluorotoluene	%	99	111	94	99	105

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	93	94	91	92

sTPH in Soil (C10-C36)						
Our Reference:	UNITS	17001-10	17001-12	17001-15	17001-17	17001-18
Your Reference	----------	BH5	BH6	BH7	BH7	Dup1
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.4-0.5	-
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
TPH C_{10} - C_{14}	mg/kg	<50	<50	<50	<50	<50
TPH C_{15} - C_{28}	mg/kg	<100	<100	<100	<100	<100
TPH C_{29} - C_{36}	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	95	94	93	90	93

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- ---------- 	17001-1 BH1 0.0-0.1 13/02/2008 Soil	17001-4 BH2 0.0-0.1 13/02/2008 Soil	17001-6 BH3 0.0-0.1 13/02/2008 Soil	17001-8 BH4 0.0-0.1 13/02/2008 Soil	17001-9 BH4 0.3-0.4 13/02/2008 Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
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	0.6	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	1.7	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	1.5	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	0.6	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	0.7	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	<0.2	1.0	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	0.5	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	0.5	<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	0.4	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	97	97	94	97	100

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- ----------	17001-10 BH5 0.0-0.1 13/02/2008 Soil	17001-12 BH6 0.0-0.1 13/02/2008 Soil	17001-15 BH7 0.0-0.1 13/02/2008 Soil	17001-17 BH7 0.4-0.5 13/02/2008 Soil	17001-18 Dup1 - 13/02/2008 Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.2	0.2	<0.1	<0.1
Pyrene	mg/kg	0.1	0.2	0.2	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.1	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	0.2	0.1	<0.1	<0.1
Benzo(b,k)fluoranthene	mg/kg	<0.2	0.3	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.07	0.2	0.1	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.2	<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-d_{14}	%	98	97	98	98	98

Organochlorine Pesticides in soil						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
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	%	127	127	125	127	129

Organochlorine Pesticides in soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- ----------	17001-10 BH5 0.0-0.1 13/02/2008 Soil	17001-12 BH6 0.0-0.1 13/02/2008 Soil	17001-15 BH7 0.0-0.1 13/02/2008 Soil	17001-17 BH7 0.4-0.5 13/02/2008 Soil	17001-18 Dup1 - 13/02/2008 Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
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	%	125	126	124	127	124

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- ----------	17001-1 BH1 0.0-0.1 13/02/2008 Soil	17001-4 BH2 0.0-0.1 13/02/2008 Soil	17001-6 BH3 0.0-0.1 13/02/2008 Soil	17001-8 BH4 0.0-0.1 13/02/2008 Soil	17001-9 BH4 0.3-0.4 13/02/2008 Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
Arochlor 1016	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	%	127	127	125	127	129

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ---------- ----------	17001-10 BH5 0.0-0.1 13/02/2008 Soil	17001-12 BH6 0.0-0.1 13/02/2008 Soil	17001-15 BH7 0.0-0.1 13/02/2008 Soil	17001-17 BH7 0.4-0.5 13/02/2008 Soil	17001-18 Dup1 - 13/02/2008 Soil
Date extracted	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	16/02/2008	16/02/2008	16/02/2008	16/02/2008	16/02/2008
Arochlor 1016	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	%	125	126	124	127	124

Acid Extractable metals in soil						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Arsenic	mg/kg	<4.0	6.1	14	7.5	6.5
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	32	150	33	34	25
Copper	mg/kg	42	39	15	16	8.9
Lead	mg/kg	53	100	87	42	31
Mercury	mg/kg	0.25	0.24	0.27	<0.10	<0.10
Nickel	mg/kg	66	4.9	6.4	7.8	3.4
Zinc	mg/kg	69	160	79	52	35

Acid Extractable metals in soil						
Our Reference:	UNITS	17001-10	17001-12	17001-15	17001-17	17001-18
Your Reference	----------	BH5	BH6	BH7	BH7	Dup1
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.4-0.5	-
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Arsenic	mg/kg	35	12	7.3	8.8	10
Cadmium	mg/kg	<1.0	<1.0	<1.0	<1.0	<1.0
Chromium	mg/kg	48	14	18	24	27
Copper	mg/kg	30	21	9.6	8.0	14
Lead	mg/kg	220	48	59	26	30
Mercury	mg/kg	2.0	0.13	0.11	<0.10	<0.10
Nickel	mg/kg	24	5.1	3.3	4.6	6.1
Zinc	mg/kg	220	83	93	17	23

Moisture						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Moisture	%	17	25	26	23	24

Moisture						
Our Reference:	UNITS	17001-10	17001-12	17001-15	17001-17	17001-18
Your Reference	----------	BH5	BH6	BH7	BH7	Dup1
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.4-0.5	-
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Date analysed	-	15/02/2008	15/02/2008	15/02/2008	15/02/2008	15/02/2008
Moisture	%	23	21	24	23	25

Asbestos ID - soils						
Our Reference:	UNITS	17001-1	17001-4	17001-6	17001-8	17001-9
Your Reference	----------	BH1	BH2	BH3	BH4	BH4
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.0-0.1	0.3-0.4
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	18/02/2008	18/02/2008	18/02/2008	18/02/2008	18/02/2008
Sample Description	-	30g soil	30g soil	30g soil	30g soil	30g soil
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Asbestos ID - soils					
Our Reference:	UNITS	17001-10	17001-12	17001-15	17001-17
Your Reference	----------	BH5	BH6	BH7	BH7
Depth	----------	0.0-0.1	0.0-0.1	0.0-0.1	0.4-0.5
Date Sampled		13/02/2008	13/02/2008	13/02/2008	13/02/2008
Type of sample		Soil	Soil	Soil	Soil
Date analysed	-	18/02/2008	18/02/2008	18/02/2008	18/02/2008
Sample Description	-	30g soil	30g soil	30g soil	30g soil
Asbestos ID in soil	-	No asbestos detected	No asbestos detected	No asbestos detected	No asbestos detected
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
GC.16	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.
GC.14	Soil samples extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
GC.3	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
GC.12	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
GC-5	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
GC-6	Soil samples are extracted with hexane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals.20 ICP-AES	Determination of various metals by ICP-AES.
Metals.21 CV-AAS	Determination of Mercury by Cold Vapour AAS.
LAB.8	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
AS4964-2004	Qualitative identification of asbestos type fibres in bulk using Polarised Light Microscopy and Dispersion Staining Techniques.

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-3	15/2/08%
Date analysed	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-3	15/2/08%
vTPH C_6 - C_9	mg/kg	25	GC.16	<25	17001-1	<25 || <25	LCS-3	112%
Benzene	mg/kg	0.5	GC.14	<0.5	17001-1	<0.5 || <0.5	LCS-3	90%
Toluene	mg/kg	0.5	GC.14	<0.5	17001-1	<0.5 || <0.5	LCS-3	124%
Ethylbenzene	mg/kg	1	GC.14	<1.0	17001-1	<1.0 || <1.0	LCS-3	115%
m + p-Xylene	mg/kg	2	GC.14	<2.0	17001-1	<2.0 || <2.0	LCS-3	120%
o-Xylene	mg/kg	1	GC.14	<1.0	17001-1	<1.0 || <1.0	LCS-3	120%
Surrogate aaa-Trifluorotoluene	%		GC.14	101	17001-1	102 || 98 || RPD: 4	LCS-3	98%
QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Date analysed	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
TPH C_{10} - C_{14}	mg/kg	50	GC.3	<50	17001-1	<50 || <50	LCS-4	102%
TPH C_{15} - C_{28}	mg/kg	100	GC.3	<100	17001-1	<100 || <100	LCS-4	86%
TPH C_{29} - C_{36}	mg/kg	100	GC.3	<100	17001-1	<100 || <100	LCS-4	95%
Surrogate o-Terphenyl	%		GC.3	90	17001-1	94 || 95 || RPD: 1	LCS-4	90%
QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Date analysed	-			15/2/08	17001-1	16/02/2008 || 16/02/2008	LCS-4	16/2/08%
Naphthalene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	110%
Acenaphthylene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	101%
Phenanthrene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	101%
Anthracene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	103%
Pyrene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	105%
Benzo(a)anthracene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	LCS-4	114%
Benzo(b,k)fluoranthene	mg/kg	0.2	GC.12	<0.2	17001-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	GC.12	<0.05	17001-1	<0.05 || <0.05	LCS-4	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	GC.12	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		GC.12	97	17001-1	97 || 100 || RPD: 3	LCS-4	93%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Date analysed	-			16/2/08	17001-1	16/02/2008 || 16/02/2008	LCS-4	16/2/08%
HCB	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	106%
gamma-BHC	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	107%
Heptachlor	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	98%
delta-BHC	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	97%
Heptachlor Epoxide	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	105%
gamma-Chlordane	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	103%
Dieldrin	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	104%
Endrin	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	105%
pp-DDD	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	103%
Endosulfan II	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	LCS-4	105%
Methoxychlor	mg/kg	0.1	GC-5	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-5	125	17001-1	127 || 128 || RPD: 1	LCS-4	124%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Date analysed	-			16/2/08	17001-1	16/02/2008 || 16/02/2008	LCS-4	16/2/08%
Arochlor 1016	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	LCS-4	102%
Arochlor 1260	mg/kg	0.1	GC-6	<0.1	17001-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		GC-6	125	17001-1	127 || 128 || RPD: 1	LCS-4	137%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Date analysed	-			15/2/08	17001-1	15/02/2008 || 15/02/2008	LCS-4	15/2/08%
Arsenic	mg/kg	4	Metals.20 ICP-AES	<4.0	17001-1	<4.0 || <4.0	LCS-4	104%
Cadmium	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	<1.0 || <1.0	LCS-4	105%
Chromium	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	32 || 29 || RPD: 10	LCS-4	107%
Copper	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	42 || 43 || RPD: 2	LCS-4	106%
Lead	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	53 || 44 || RPD: 19	LCS-4	103%
Mercury	mg/kg	0.1	Metals.21 CV-AAS	<0.10	17001-1	0.25 || 0.16 || RPD: 44	LCS-4	113%
Nickel	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	66 || 73 || RPD: 10	LCS-4	106%
Zinc	mg/kg	1	Metals.20 ICP-AES	<1.0	17001-1	69 || 56 || RPD: 21	LCS-4	106%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD
Date prepared	-			15/2/08	17001-1	15/02/2008 || 15/02/2008
Date analysed	-			15/2/08	17001-1	15/02/2008 || 15/02/2008
Moisture	%	0.1	LAB.8	<0.10	17001-1	17 || 17 || RPD: 0

QUALITY CONTROL Asbestos ID - soils	UNITS	PQL	METHOD	Blank
Date analysed	-			[NT]

QUALITY CONTROL vTPH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	15/2/08%
vTPH C_6 - C_9	mg/kg	[NT]	[NT]	17001-4	95%
Benzene	mg/kg	[NT]	[NT]	17001-4	130%
Toluene	mg/kg	[NT]	[NT]	17001-4	109%
Ethylbenzene	mg/kg	[NT]	[NT]	17001-4	103%
m + p-Xylene	mg/kg	[NT]	[NT]	17001-4	108%
o-Xylene	mg/kg	[NT]	[NT]	17001-4	105%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	17001-4	104%

QUALITY CONTROL sTPH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	15/2/08%
TPH C_{10} - C_{14}	mg/kg	[NT]	[NT]	17001-4	104%
TPH C_{15} - C_{28}	mg/kg	[NT]	[NT]	17001-4	108%
TPH C_{29} - C_{36}	mg/kg	[NT]	[NT]	17001-4	97%
Surrogate o-Terphenyl	%	[NT]	[NT]	17001-4	91%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	16/2/08%
Naphthalene	mg/kg	[NT]	[NT]	17001-4	90%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	17001-4	100%
Phenanthrene	mg/kg	[NT]	[NT]	17001-4	100%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	17001-4	100%
Pyrene	mg/kg	[NT]	[NT]	17001-4	103%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	17001-4	113%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Benzo(b,k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	17001-4	108%
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-d_{14}	%	[NT]	[NT]	17001-4	89%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	16/2/08%
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	17001-4	109%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	17001-4	108%
Heptachlor	mg/kg	[NT]	[NT]	17001-4	104%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	17001-4	101%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	17001-4	109%
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]	17001-4	107%
Dieldrin	mg/kg	[NT]	[NT]	17001-4	108%
Endrin	mg/kg	[NT]	[NT]	17001-4	109%
pp-DDD	mg/kg	[NT]	[NT]	17001-4	105%
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]	17001-4	110%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	17001-4	123%

QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	16/2/08%
Arochlor 1016	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]	17001-4	108%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	17001-4	140%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	17001-4	15/2/08%
Date analysed	-	[NT]	[NT]	17001-4	15/2/08%
Arsenic	mg/kg	[NT]	[NT]	17001-4	104%
Cadmium	mg/kg	[NT]	[NT]	17001-4	98%
Chromium	mg/kg	[NT]	[NT]	17001-4	77%
Copper	mg/kg	[NT]	[NT]	17001-4	115%
Lead	mg/kg	[NT]	[NT]	17001-4	104%
Mercury	mg/kg	[NT]	[NT]	17001-4	112%
Nickel	mg/kg	[NT]	[NT]	17001-4	102%
Zinc	mg/kg	[NT]	[NT]	17001-4	107%

Report Comments:

Asbestos was analysed by Approved Identifier: Joshua Lim

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

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:

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. Surrogates: 60-140% is acceptable for general organics and 10-140% for SVOC and speciated phenols.

APPENDIX C

Joanne Rosner

From: espreon@espreon.com
Sent: Thursday, 31 January 2008 3:37 PM
To: espreon@espreon.com
Cc: eis@jkgroup.net.au
Subject: Offline Search Request

Contact Name - Rose Healy
Company Name - JEFFERY AND KATAUSKAS PTY LTD
Account Code - 3JEFF322
Your Reference - E21874FJ
Our Reference - 72819629
Date / Time - 31-01-08, 15:37
Phone Number - 0298885000
Fax Number - 0298885004
Return Address - PO BOX 976, NORTH RYDE
Return Address - PO BOX 976, NORTH RYDE
Return State - NSW
Return Post Code - 1670
Conduct search in NSW

Email - eis@jkgroup.net.au

Instructions:
I would like to order a copy of the historical title information for sites - 5 Allengrove Cresent Lot 5 in DP28702, 259A Lane Cove Road Lot 23 in DP869002, 263 Lane Cove Road Lot 100 in DP739172 and 120 Epping Road Lot 10 in DP606927. Could you please limit the search to $600. Thank you.

Regards,

Espreon Online Information System

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/28702

SEARCH DATE	TIME	EDITION NO	DATE
31/1/2008	3:04 PM	10	15/1/2008

LAND

LOT 3 IN DEPOSITED PLAN 28702
AT NORTH RYDE
LOCAL GOVERNMENT AREA RYDE
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP28702

FIRST SCHEDULE

EGC CUSTODIAN SERVICES PTY LIMITED (T AB899511)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AC532241 MORTGAGE TO ST. GEORGE BANK LIMITED
AD168240 VARIATION OF MORTGAGE AC532241
AD589913 VARIATION OF MORTGAGE AC532241
AD701240 VARIATION OF MORTGAGE AC532241

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

Espreon Online Information System

Account: 3JEFF322 **User:** jeff

» Our Services
» Email Us
Helpline 1300 305 205

Home / Offline Order

SITE NEWS NEW

- Search Pad
- Search Pad Trans History
- + ASIC/Bus.Names Menu
- + NSW LTO Menu
- + VIC LTO Menu
- + QLD Property Menu
- + Other State Land Titles
- + ITSA Menu
- + Sydney Water Menu
- + NSW OSR Menu
- + Credit Reports
- + Property Enquiries (Formerly SUE)
- + Settlements Menu
- **Offline Order**
- Offline Orders Transaction History
- Account News
- Change Password
- Account Fee Enquiry
- Account Maintenance
- Account Payment by Credit Card
- Price Book

» Logout

» Turn Tips OFF

Your order has been sent

Following is a copy of the email you requested on 31-01-08 at 15:37.

The email was sent to for processing.

Contact Name:	**Rose Healy**
Company Name:	**JEFFERY AND KATAUSKAS PTY LTD**
Account Code:	**3JEFF322**
Your Reference:	**E21874FJ**
Our Reference:	**72819629**
Date / Time:	**31/01/2008, 15:37**
Phone Number:	**0298885000**
Fax Number:	**0298885004**
Return Address :	**PO BOX 976, NORTH RYDE**
Return Address :	**PO BOX 976, NORTH RYDE**
Return State :	**NSW**
Return Post Code :	**1670**
	Conduct search in NSW
Email:	**eis@jkgroup.net.au**

Instructions:
I would like to order a copy of the historical title information for sites - 5 Allengrove

Email: **eis@jkgroup.net.au**

Instructions:
I would like to order a copy of the historical title information for sites - 5 Allengrove Cresent Lot 5 in DP28702, 259A Lane Cove Road Lot 23 in DP869002, 263 Lane Cove Road Lot 100 in DP739172 and 120 Epping Road Lot 10 in DP606927. Could you please limit the search to $600. Thank you.

Your order will appear in the **Offline requests** transaction history.
For offline ordering assistance contact the Help Desk on 1300 305 205.

Created on Thu 31st Jan 2008 at 15:37:20 AEST

Espreon Online Information System
NSW LPI Title Search

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 3/28702

SEARCH DATE	TIME	EDITION NO	DATE
31/1/2008	3:04 PM	10	15/1/2008

LAND

LOT 3 IN DEPOSITED PLAN 28702
AT NORTH RYDE
LOCAL GOVERNMENT AREA RYDE
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP28702

FIRST SCHEDULE

EGC CUSTODIAN SERVICES PTY LIMITED (T AB899511)

SECOND SCHEDULE (2 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 AC532241 MORTGAGE TO ST. GEORGE BANK LIMITED
AD168240 VARIATION OF MORTGAGE AC532241
AD589913 VARIATION OF MORTGAGE AC532241
AD701240 VARIATION OF MORTGAGE AC532241

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

E21874FJ PRINTED ON 31/1/2008

Search of Folio: DP 3/28702 Date: 31-01-08 Time: 15:04:49.514

JEFFERY AND KATAUSKAS PTY LTD

Account	3jeff322
User	jeff
Folio Reference	3/28702
Client Reference	E21874FJ
Our Reference	72815694
Authority Fee	$ 6.20
Espreon Property Services Pty Ltd Fee	$ 5.15
Misc. Charges	$ 0.00
GST	$ 1.14
TOTAL	**$ 12.49**

AR EHS

[redacted]

15 FEB 2008

espreon

Customer No 3JEFF322

Tax Invoice

Invoice A970634

Date 04/02/08

Espreon Property Services Pty Ltd
ABN 42 089 586 872
PO Box A2151 Sydney Sth NSW 1235
t 1300 305 205 **f** 1300 553 030
e espreon@espreon.com

www.espreon.com
ABN 42 089 586 872

Our reference 633428
Action By LN

Payment Terms Monthend + 14 days
Due Date 14/03/08

JEFFERY AND KATAUSKAS PTY LTD
TODD HORE /TED FLETCHER
PO BOX 976
NORTH RYDE BC NSW 1670

Your Reference
E21874FJ

Matter
5/28702 Historical Title Search

Item No	Description	Amount	GST	Total incl. GST
C1	Historical Title Search	241.45	24.15	265.60*
Doc. Ref. Numbers	5/28702			
DC	LPI Charge	150.00	15.00	165.00*
* Indicates Taxable Supply	**Total**	**391.45**	**39.15**	**430.60**

espreon

Customer No 3JEFF322

Invoice A970634

Date 04/02/08

Espreon Property Services Pty Ltd
ABN 42 089 586 872
PO Box A2151 Sydney Sth NSW 1235
t 1300 305 205 **f** 1300 553 030
e espreon@espreon.com

www.espreon.com

JEFFERY AND KATAUSKAS PTY

Due Date 14/03/08

Total 430.60

Please return this section with your payment

— Search Report —

Re: North Ryde
lot 5 in DP 28702, lot 23 in DP 869002
lot 100 in DP 739172 and lot 10 in DP 606927.

1. 5/28702 Title
5/28702 Historical. Z 482015 Transfer, Z 266935 Transmission
Prior title: Vol. 13513 Fol. 232
Bk 2153 No 356 Conveyance

2. 23/869002 Title
23/869002 Historical
7486414 Transfer
3893072 Transfer
3893062 Transmission
Prior titles: 3/504970 Historical
4/504970 Historical
Vol. 9519 Fols 133 and 134
Vol. 6707 Fols 25 and 26
Vol. 5386 Fol. 99
Vol. 4455 Fol. 130 Vol. 2642 Fol. 214, PA. 18860

3. 100/739172 Title
100/739172 Historical W 714311 Transfer
Prior titles: Vol. 5388 Fol. 94
Vol 4455 Fol. 130, Vol. 2642 Fol. 214 PA. 18860

4. 10/606927 Title
10/606927 Historical
Prior titles: Vol. 14095 Fol. 160
Vol. 6707 Fol. 160
Vol. 5388 Fol. 95;
Vol. 4455 Fol. 130 Vol. 2642 Fol. 214 PA. 18860

4.2.2008

Cadastral Records Viewer Print
Printed : Monday, 4 February 2008 1:21:16 PM by planroom3
Current Feature
Lot 100 DP739172
Locality: NORTH RYDE
LGA: RYDE
Parish: HUNTERS HILL
County: CUMBERLAND
LEGEND
Parcels (selected Features)
Current Feature
Other Selected Features
Localities
LGAs
Rail Corridor
Waterway Corridor
Waterways
Unidentified Parcels
Parcels
Standard Lot
Standard Part Lot
Strata
Stratum
Road Corridor
Roads
EPPING RD
LANE COVE RD
PAUL ST
ALLENGROVE CR
DP 739172
100
101
DP 606927
PT1
DP 524945
SP 70286
PT2
DP 409100
DP 28702
DP 845252
DP 576484
DP 371325
PT1
DP 504970
DP 86900223
DP 656171
DP 656172
DP 1114129
DP 654319
DP 35307A
PT1
PT2
PT3
PT4
0
12.03m
Department of Lands
Copyright (C) Department of Lands.
This information is provided as a searching aid only. While every endeavour is made to ensure the current cadastral pattern is accurately reflected, the Registrar General cannot guarantee the information provided.

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 5/28702

SEARCH DATE	TIME	EDITION NO	DATE
4/2/2008	12:46 PM	8	15/1/2008

LAND

LOT 5 IN DEPOSITED PLAN 28702
AT NORTH RYDE
LOCAL GOVERNMENT AREA RYDE
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP28702

FIRST SCHEDULE

EGC CUSTODIAN SERVICES PTY LIMITED (T AB734119)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 BK 2453 NO 386 COVENANT
3 AC532241 MORTGAGE TO ST. GEORGE BANK LIMITED
AD168240 VARIATION OF MORTGAGE AC532241
AD589913 VARIATION OF MORTGAGE AC532241
AD701240 VARIATION OF MORTGAGE AC532241

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

MI/MI PRINTED ON 4/2/2008

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
4/2/2008 12:46PM

FOLIO: 5/28702

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 13513 FOL 232

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
23/11/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
8/10/1990	Z266935	TRANSMISSION APPLICATION	EDITION 1
17/10/1990	Z303018	DEPARTMENTAL DEALING	EDITION 2
31/1/1991	Z482015	TRANSFER	
31/1/1991	Z482016	MORTGAGE	EDITION 3
31/8/2005	AB734118	DISCHARGE OF MORTGAGE	
31/8/2005	AB734119	TRANSFER	EDITION 4
16/8/2006	AC532241	MORTGAGE	EDITION 5
4/6/2007	AD168240	VARIATION OF MORTGAGE	EDITION 6
26/11/2007	AD589913	VARIATION OF MORTGAGE	EDITION 7
15/1/2008	AD701240	VARIATION OF MORTGAGE	EDITION 8

*** END OF SEARCH ***

MI/MI PRINTED ON 4/2/2008

RP 13
1985

STAMP DUTY

OFFICE OF STATE REVENUE
(N.S.W. TREASURY)
1990/91 S2
DULY STAMPED

OFFICE USE ONLY

TRANSFER

REAL PROPERTY ACT, 1900

T

of

$

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
FOLIO IDENTIFIER 5/28702	WHOLE	AT NORTH RYDE MUNICIPALITY OF RYDE PARISH HUNTERS HILL COUNTY CUMBERLAND

PERMANENT TRUSTEE COMPANY LIMITED

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of $ 184,500-00
and transfers an estate in fee simple
in the land above described to the TRANSFEREE

DEBS
MICHARL ~~DEBBS~~ and MARY MONHEM
both of 5 Allengrove Crescent, North Ryde

as joint tenants/~~tenants in common~~

OFFICE USE ONLY

TENANCY
Note (e)

PRIOR ENCUMBRANCES
Note (f)

subject to the following PRIOR ENCUMBRANCES: 1. ..... 2. ..... 3. .....

DATE

EXECUTION
Note (g)

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

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

Signature of Witness

Pamela Hall
Name of Witness (BLOCK LETTERS)

25 O'Connell St Sydney
Address and occupation of Witness

Secretary

PERMANENT TRUSTEE COMPANY LIMITED (A.C.N. 000 000 993) its Attorneys who state that they have no notice of the revocation of the Power of Attorney dated 20th June, 1979 Registered Number 679 Book 3375 whereby they execute this document.

Group A Attorney	Group B Attorney
Signature	
Name: JANE LESLIE BYRNE	GRAHAM STUART FARMER
Title: ASSISTANT GENERAL MANAGER - PERSONAL TRUST S	Signature of Transferor: TRUST ADMINISTRATOR

Note (g)

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

Signature of Witness

Name of Witness (BLOCK LETTERS)

Address and occupation of Witness

Signature of Transferee

M A Cameron Delete for

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

LODGED BY Pate

CSB 23L

H/L 276031203
Delivery Box Number

LOCATION OF DOCUMENTS	CT	OTHER
Herewith.	✓	
In L.T.O. with		
Produced by		

OFFICE USE ONLY

Checked	Passed	REGISTERED - -19
Signed	Extra Fee	31 JAN 1990

Secondary Directions			
Delivery Directions			

B4
/Req: B397257
/Doc: DL Z482015
/Prt: 04-Feb-2008

OFFICE USE ONLY Z 266935

TRANSMISSION APPLICATION

SECTION 93, REAL PROPERTY ACT, 1900
(See Instructions for Completion on back of form)

TA	CB	1 of 1	X	R 1/1
	$ 47			

DESCRIPTION OF LAND Note (a)

LAND of which deceased is registered proprietor

Torrens Title reference	If Part Only, Delete Whole and Give Details	Location
Certificate of Title Volume 13513 Folio 232 ... whole ... COMPRISED IN FOLIO 5/28702	WHOLE	at North Ryde

REGISTERED DEALING Note (b)

LEASE, MORTGAGE, OR CHARGE of which deceased is registered proprietor

Type of Dealing	Registered Number	Torrens Title Reference	Location

DECEASED REGISTERED PROPRIETOR Note (c)

DOROTHY EMILY STOCKHAM

Note (d) (the abovenamed DECEASED) is registered as proprietor of the land above described. ~~abovementioned registered dealing.~~ The APPLICANT

APPLICANT Note (e)

PERMANENT TRUSTEE COMPANY LIMITED of 23-25 O'Connell Street, Sydney

OFFICE USE ONLY: ON M

ENTITLEMENT Note (f) and (j)

being entitled as Executor of the will/~~estate~~ of the abovenamed deceased

Probate No. ~~Letters of Administration No.~~ 110371/90 of whose will was ~~of whose estate were~~ granted on 24th July 1990

to Permanent Trustee Company Limited

Note (d) hereby applies to be registered as proprietor of the estate or interest of the said deceased in the land above described. ~~abovementioned registered dealing.~~

DATE

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

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

EXECUTION Note (g)

[signature]
Signature of Witness

Pamela Hall
Name of Witness (BLOCK LETTERS)

25 O'Connell St Sydney
Address and Occupation of Witness
Secretary

0500

PERMANENT TRUSTEE COMPANY LIMITED by its Attorney who states he has no notice of the revocation of the Power of Attorney dated 20th June 1979 Registered Number 679 Book 1375 whereby he execute this document.

[signature]
Signature of Applicant

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

LODGED BY
BRUCE A. TRIMBLE & Co
65B PENNANT HILLS ROAD
P.O. Box W11
WEST PENNANT HILLS, N.S.W. 2120
DX 1213 SYDNEY
TEL: 481-0155
Ref:
Delivery Box Number 1002 P

$47

CT	PROBATE No. AND/OR OTHER	DATE OF DEATH	LOCATION OF DOCUMENTS
—	Pbte Sighted + Returned	1.4.90	Herewith. Letter
			In L.T.O. with
			Produced by

OFFICE USE ONLY

Checked	Passed	REGISTERED -19	Secondary Directions	OFF QG
Signed	Extra Fee	8 OCT 1990	Delivery Directions	CT 1002 P

Bk 2453 - 316

B4j
/Req: B397210
/Doc: CT 13513-232
/Prt: 01-Feb-2008

NEW S

OF TITLE

ACT, 1900

Vol. 13513 Fol. 232

IVA NO 41599

EDITION ISSUED

20 12 1977

13513 Fol. 232

(Page 1) Vol.

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.

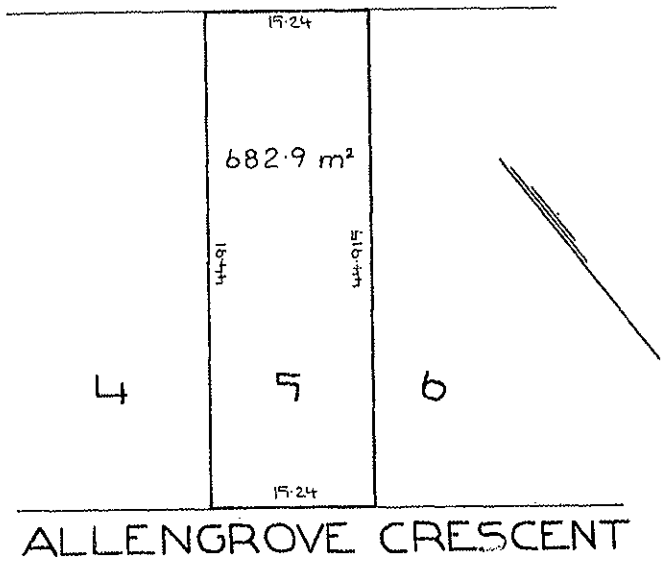
CANCELLED

Registrar General

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



IVA 41599 fw

S

REDUCTION RATIO 1:500

ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 5 in Deposited Plan 28702 at North Ryde in the Municipality of Ryde Parish of Hunters Hill and County of Cumberland being part of Portion 42 granted to James Weavers on 11-8-1804.

FIRST SCHEDULE

DOROTHY EMILY STOCKHAM of North Ryde, Retired Business Woman.

SECOND SCHEDULE

GRY 1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
QG 2. CAUTION. The land within described is held subject to any subsisting interest (as defined in Section 28A of the Real Property Act, 1900). 20-12-1977
CV 3. Bk 2453 No 386 Covenant.

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

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

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

Vol. 13513 Fol. 222

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT			ENTERED	Signature of Registrar General
	NATURE	NUMBER	DATE		

SEE PLAN FOLIO

CANCELLED

SECOND SCHEDULE (continued)

INSTRUMENT			PARTICULARS	ENTERED	Signature of Registrar General	CANCELLATION		
NATURE	NUMBER	DATE						

(Page 2 of 2 pages)

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

AD VALOREM DUTY PAID	NEW SOUTH WALES STAMP DUTY
CONVEYANCE £12.10. 0 N.S.W. STAMP DUTIES OFFICE	SEVEN SHILLINGS SIXPENCE DULY STAMPED B 25 7 58

THIS DEED made the **twenty-third** day of **July,** One thousand nine hundred and fifty-eight between HENRY JACKSON SINGLETON of 253 Lane Cove Road North Ryde in the State of New South Wales Gentleman Retired of the one part and DOROTHY STOCKHAM of 13 Innes Road, Greenwich Heights in the State aforesaid Stenographer of the other part WHEREAS the said Henry Jackson Singleton is seised for an estate in fee simple free from encumbrances in the hereditaments hereinafter expressed to be hereby conveyed AND WHEREAS the said Henry Jackson Singleton has agreed with the said Dorothy Stockham by contract dated 29th May 1958 for the sale to her of the said hereditaments at or for the sum or price of nine hundred and twenty pounds (£920) NOW THIS DEED WITNESSETH that in consideration of the sum of nine hundred and twenty pounds (£920) paid by the said Dorothy Stockham to the said Henry Jackson Singleton (the receipt whereof is hereby acknowledged) the said Henry Jackson Singleton as beneficial owner doth hereby convey unto the said Dorothy Stockham in fee simple ALL THAT piece of land containing by admeasurement 27 perches or thereabouts situate at Allengrove Crescent North Ryde in the Municipality of Ryde Parish of Hunters Hill County of Cumberland being Lot 5 in Registered Plan (O.S.) No.2196 AND the said Henry Jackson Singleton hereby covenants with the said Dorothy Stockham to produce the documents mentioned in the schedule hereto and the Purchaser for herself her heirs executors administrators successors and assigns HEREBY COVENANT with the Vendor his heirs executors administrators and assigns (other than purchasers on sale) that no fence shall be erected on the property hereby conveyed to divide it from any adjoining land owned by the Vendor without the consent of the Vendor his heirs executors administrators or assigns but such consent shall not be withheld if any such fence is erected without expense to the Vendor his heirs executors administrators and assigns and in favour of any person dealing with the purchaser her heirs executors administrators or assigns such consent shall be deemed to have been given in respect of every such fence for the time being erected AND IT IS HEREBY DECLARED that the land to which the benefit of the foregoing covenant is appurtenant is the land comprised in Lots 4 and 6 in Registered Plan (O.S.) No.2196 AND the land which is subject to the burden of the foregoing covenant is the land hereby conveyed AND the said covenant may be released varied or modified by the Vendor his heirs executors administrators or assigns or other the owner or owners for the time being of the land to which the benefit of the said covenant is appurtenant

D. E. Stockham

IN WITNESS WHEREOF the parties have hereunto subscribed their names and affixed their seals on the day and year firstly hereinbefore writeen

THE SCHEDULE HEREINBEFORE REFERRED TO

2nd December 1920	Conveyance George William Lavender to Henry Jackson Singleton	No.389 Book 1211
2nd December 1920	Mortgage Henry Jackson Singleton to Alfred John Thomas	No.390 Book 1211
15th October 1926	Reconveyance Helena Thomas to Henry Jackson Singleton endorsed thereon	No.665 Book 1446
6th October 1922	Mortgage Henry Jackson Singleton to Francis Farraher	No.220 Book 1277
15th October 1926	Statutory discharge endorsed thereon	No.664 Book 1446
15th October 1926	Mortgage Henry Jackson to Helena Thomas	No.666 Book 1446
27th March 1946	Reconveyance Helena Thomas to Henry Jackson Singletop	No.815 Book 2035
28th March 1946	Mortgage Henry Jackson Singleton to George John Power and Emma Florence Power	No.816 Book 2035
26th March 1958	Reconveyance Emma Florence Power to Henry Jackson Singleton annexed thereto	No.334 Book 2439

SIGNED SEALED AND DELIVERED by the said)
)
HENRY JACKSON SINGLETON) H.J.SINGLETON
)
in the presence of:- C.MARSH)
Solicitor,
Sydney.

SIGNED SEALED AND DELIVERED by the said)
)
DOROTHY STOCKHAM in the presence of;) D.E.STOCKHAM

A.F.HARDY J.P. Accountant
15 Lenore Street,
FIVEDOCK.

Janet Mackie Clerk to George A. Raves and Poole of 115 Pitt Street Sydney Solicitors being duly sworn makes oath and says: the writing contained above and on the preceding page has been compared by me with the original Conveyance and is a true copy thereof.

Sworn at Sydney this [illegible] day of [illegible] One thousand nine hundred and fifty eight.

Deputy Registrar.

Received into the Registration of Deeds office at Sydney this [illegible] day of [illegible] one thousand nine hundred and fifty-eight at [illegible] minutes past [illegible] o'clock in the [illegible] noon from Janet Mackie clerk to George A. Raves and Poole of Sydney Solicitors.

Deputy Registrar.

Book. 3403

Ad Valorem Duty f...
N.S.W. STAMP DUTY ...

NO. Book

THIS DEED made the ...
BETWEEN ROY HARRIS ...
Wales Retired Farme...
THE PRESBYTERIAN Co...
44 Margaret Sydney ...
other part WHEREAS ...
thousand nine hundr...
Vendor became seise...
inter alia Lot 147 ...
particularly descri...
Conveyance dated th...
fifty seven the Ven...
encumbrances of the...
No. 1519 and more p...
WHEREAS the Vendor ...
Purchaser or the la...
for the price or su...
WITNESSETH that in ...
sum of Eight hundre...
(the receipt whereo...
beneficial owner ho...
piece or parcel of ...
AND for the conside...
Purchaser for the p...
IN WITNES...
their hands and sea...
written.

THE FIRST ...

ALL THAT piece or p...
County of Wynyard P...
of part of Portions ...
shown in Registered ...

THE SECO...

ALL THAT piece or p...
area a little more ...
Wynyard Parish of C...
of Portions 102 and ...
a point on the South...
from its intersectio...
Western side of an u...
and bounded on the ...
Albert Road bearing ...
17 minutes 40.2 link...
degrees 17 minutes ...
bearing 42 degrees ...
un-named road 150 li...
said South Western s...
198.1 links thence ...
250 degrees 20 minut...

THE THIRD ...

11th April 1950. Co...
re...

SIGNED SEALED and D...

by ROY HARRIS who is ...

personally known to ...

GIVEN under the Com...
PRESBYTERIAN CHURCH ...
TRUST by: Walter S...
Mason, Victor Clark ...

Members of the said ...
surance of a resolu...
at a duly convened ...
of:

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 23/869002

SEARCH DATE	TIME	EDITION NO	DATE
4/2/2008	12:46 PM	10	15/1/2008

LAND

LOT 23 IN DEPOSITED PLAN 869002
AT NORTH RYDE
LOCAL GOVERNMENT AREA RYDE
PARISH OF HUNTERS HILL COUNTY OF CUMBERLAND
TITLE DIAGRAM DP869002

FIRST SCHEDULE

EGC CUSTODIAN SERVICES PTY LIMITED (T AA433418)

SECOND SCHEDULE (3 NOTIFICATIONS)

1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
2 J873924 RIGHT OF CARRIAGEWAY APPURTENANT TO THE PART SHOWN SO BENEFITED IN THE TITLE DIAGRAM AFFECTING THE SITE OF PROPOSED RIGHT OF CARRIAGEWAY 10 FT WIDE SHOWN WITHIN LOT 2 IN DP504970
3 AB60455 MORTGAGE TO ST. GEORGE BANK LIMITED
AC94860 VARIATION OF MORTGAGE AB60455
AC545619 VARIATION OF MORTGAGE AB60455
AD168336 VARIATION OF MORTGAGE AB60455
AD589909 VARIATION OF MORTGAGE AB60455
AD701183 VARIATION OF MORTGAGE AB60455

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

MI/MI PRINTED ON 4/2/2008

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - HISTORICAL SEARCH

SEARCH DATE
4/2/2008 12:47PM

FOLIO: 23/869002

First Title(s): OLD SYSTEM
Prior Title(s): 3-4/504970

Recorded	Number	Type of Instrument	C.T. Issue
26/11/1997	DP869002	DEPOSITED PLAN	FOLIO CREATED EDITION 1
1/4/1998	3893062	TRANSMISSION APPLICATION	
1/4/1998	3893072	TRANSFER	EDITION 2
21/3/2001	7486414	TRANSFER	
21/3/2001	7486415	MORTGAGE	EDITION 3
19/2/2004	AA433417	DISCHARGE OF MORTGAGE	
19/2/2004	AA433418	TRANSFER	EDITION 4
1/11/2004	AB60455	MORTGAGE	EDITION 5
6/2/2006	AC94860	VARIATION OF MORTGAGE	EDITION 6
24/8/2006	AC545619	VARIATION OF MORTGAGE	EDITION 7
4/6/2007	AD168336	VARIATION OF MORTGAGE	EDITION 8
26/11/2007	AD589909	VARIATION OF MORTGAGE	EDITION 9
15/1/2008	AD701183	VARIATION OF MORTGAGE	EDITION 10

*** END OF SEARCH ***

MI/MI PRINTED ON 4/2/2008

Req:R834926 /Doc:DL 7486414 /Rev:27-Mar-2001 /Sts:SC.OK /Prt:04-Feb-2008 15:21 /Pgs:ALL /Seq:1 of 1
Ref:J/J /Src:E

(1)

Form: 97-01T
Licence:

TRANSFER

New South Wales
Real Property Act 1900

7486414E

Office of State Revenue use only

NEW SOUTH WALES DUTY
14-02-2001 0000535891-001
SECTION 18(2)
DUTY $ **********2.00

(A) **LAND TRANSFERRED**

If appropriate, specify the share or part transferred.

FOLIO IDENTIFIER 23/869002

(B) **LODGED BY**

LTO Box	Name, Address or DX and Telephone
605m	LEGALFILES PTY LIMITED REF FAT/893 Reference (15 character max):

(C) **TRANSFEROR** John Henry Lette & Gem Lillian Lette

(D) acknowledges receipt of the consideration of $410,000.00 and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable):

(F) **TRANSFEREE**

T TS (s713 LGA) TW (Sheriff)	**Cannies Bao Jian Pan & ZeQiang Lian**
(G)	**TENANCY:** Joint

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 1 March 2001

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

Signature of Witness

Name of Witness (BLOCK LETTERS)
TARA SIMONE CZINNER
1 JORDAN STREET, GLADESVILLE
SOLICITOR
Address of Witness

Signature of Transferor

Signature of ANDREW LUI
Solicitor for the Transferee

Checked by (LTO use) .....

Form: 97-01T
Licence: 10V/0096/95
Printed: 0597LTO

TRANSFER

3893072 L

New South Wales
Real Property Act 1900

Instructions for filling out this form are available from the Land Titles Office

Office of State Revenue use only

180398 2225 04 20141413401 0504<u>850</u>
N.S.W. STAMP DUTY

(A) **LAND TRANSFERRED** If appropriate, specify the share or part transferred.

Folio Identifier 23/869002
PART being that part of the land comprised in Folio Identifier 23/869002 formerly comprised in Folio Identifier 4/504970

(B) **LODGED BY**

LTO Box 289U

Name, Address or DX and Telephone
FARMER CAMPBELL EDMUNDS, SOLICITORS
8/110 SUSSEX STREET, SYDNEY NSW 2000
DX 934 SYDNEY TEL: 9299-4344

Reference (15 character maximum): RHF

(C) **TRANSFEROR** JEAN ELSIE PIEREMONT and JOHN HENRY LETTE

(D) acknowledges receipt of the consideration of $1.00
and as regards the land specified above transfers to the transferee an estate in fee simple.

(E) Encumbrances (if applicable): 1. .... 2. .... 3. ....

(F) **TRANSFEREE** T / TS (s713 LGA) / TW (Sheriff)

JOHN HENRY LETTE and GEM LILLIAN LETTE

(G) **TENANCY:** JOINT TENANTS

(H) We certify this dealing correct for the purposes of the Real Property Act 1900. **DATE** 23 February 1998

Signed in my presence by the transferor John Henry Lette who is personally known to me.

[signature]
Signature of Witness

ALAN RIGHTON
Name of Witness (BLOCK LETTERS)

42 EASTVIEW AVE N Ryde 2113
Address of Witness

Signed in my presence by the Transferor Jean Elsie Pieremont who is personally known to me:

[signature] Jacqueline Mitchell
Signature of Witness - Print Name

37 Endeavour Dr. Avoca Beach
Address of Witness

[signature] J E Pieremont

[signature]
Signature of Transferor

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

[signature]
Signature of Witness

ALAN RIGHTON
Name of Witness (BLOCK LETTERS)

42 EASTVIEW AVE N Ryde 2113
Address of Witness

[signature]
Signature of Transferee

If signed on the transferee's behalf by a solicitor or licensed conveyancer, show the signatory's full name in block letters.

Page 1 of 1

Checked by (LTO use) ....

M

NEW SOUTH WALES

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

V 6707-15/26

0551913

Vol. 9519 Fol. 133

1st Edition issued 29-8-1963.

(Page 1) Vol. 9519 Fol. 133

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

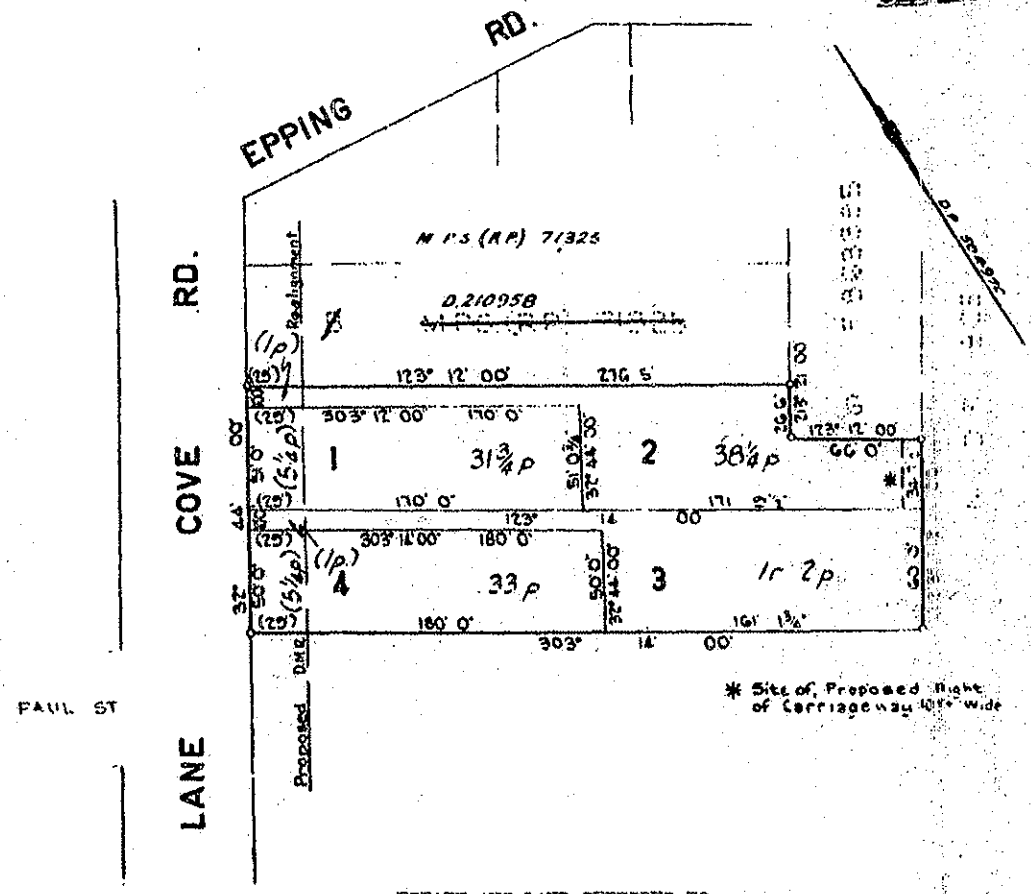
Witness B.B. Bailey

CANCELLED

Registrar-General.

SEE AUTO FOLIO

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 3 in Deposited Plan 504970 in the Municipality of Ryde Parish of Hunter's Hill and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~DOROTHY ETHEL LETTING of North Ryde, Widow.~~

Registrar General.

SECOND SCHEDULE (Continued overleaf)

CRY

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.

2. ~~Restriction on user No. 0554109 to of the 1 perch part shown in the plan hereon - See Section 27E (6) Main Roads Act 1924. Entered 29-1-1957.~~ Cancelled N706107

Registrar General.

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

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

ST 1609 V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	ENTERED	Signature of Registrar-General
~~John Henry Lette of North Ryde, Insurance Representative~~	~~Transfer~~	~~T873924~~	~~27-11-1964~~	~~2-3-1965~~	Jamieson
~~John Henry Lette of Lane Cove, Insurance Representative and Gem Lillian Lette his wife of Lane Cove, Married Woman, as joint tenants~~	~~Transfer~~	~~K330295~~	~~17-5-1966~~	~~7-6-1966~~	Jamieson
John Henry Lette of Lane Cove, Insurance Representative and Gem Lillian Lette ~~his wife~~ of Lane Cove, Married Woman as joint tenants	Transfer	K330295	17-5-1966	7-6-1966	Jamieson

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	INSTRUMENT NUMBER	INSTRUMENT DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
Transfer	T873924	27-11-1964	Right of carriageway appurtenant to the land within described affecting the site of proposed right of carriageway 10ft wide shown within lot 2 ~~in the plan herein~~ DP 504979 (comprised in Certificate of Title Vol. 9519 Fol. 135)	2-3-1965	Jamieson			
~~Mortgage~~	~~K622869~~	~~22-3-1967~~	~~to Commercial Union Assurance Company of Australia Limited~~	~~30-3-1967~~	Jamieson	Discharged	N443783	Jamieson
~~Mortgage~~	~~N443784~~	~~17-9-1971~~	~~to Rural Bank of New South Wales~~	~~20-10-1971~~	Jamieson	Discharged	R979149	[illegible]
Resumption	N706007	25-1-1974	part of the land within described being Lot 20 in D.P. 239969 is public Road vested in the Commissioner for Main Roads	4-3-1974	Jamieson			
~~Mortgage~~	~~R979150~~		~~to St. George Building Society Limited~~	~~18-8-1980~~	[illegible]	Discharged	W446306	
T627006 Mortgage to Westpac Banking Corporation. Registered 8-7-1983								

RCZ

AA

MX

J873924 [illegible]

K330295 T

DP239969

M443783 D/M

CT 2-1-74

N706007 Resump.

Pt Resumed & Declared Public Rd. Vide Gaz 7-12-73 fo 5209

R979149 D/M

50M

CT 6-4-83

T627006 MR

W446306 DMR

R.G. ord. 6-8-1990

M

NEW SOUTH WALES

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

Vol. 9519 Fol. 134

1st Edition issued 29-8-1963.

CANCELLED

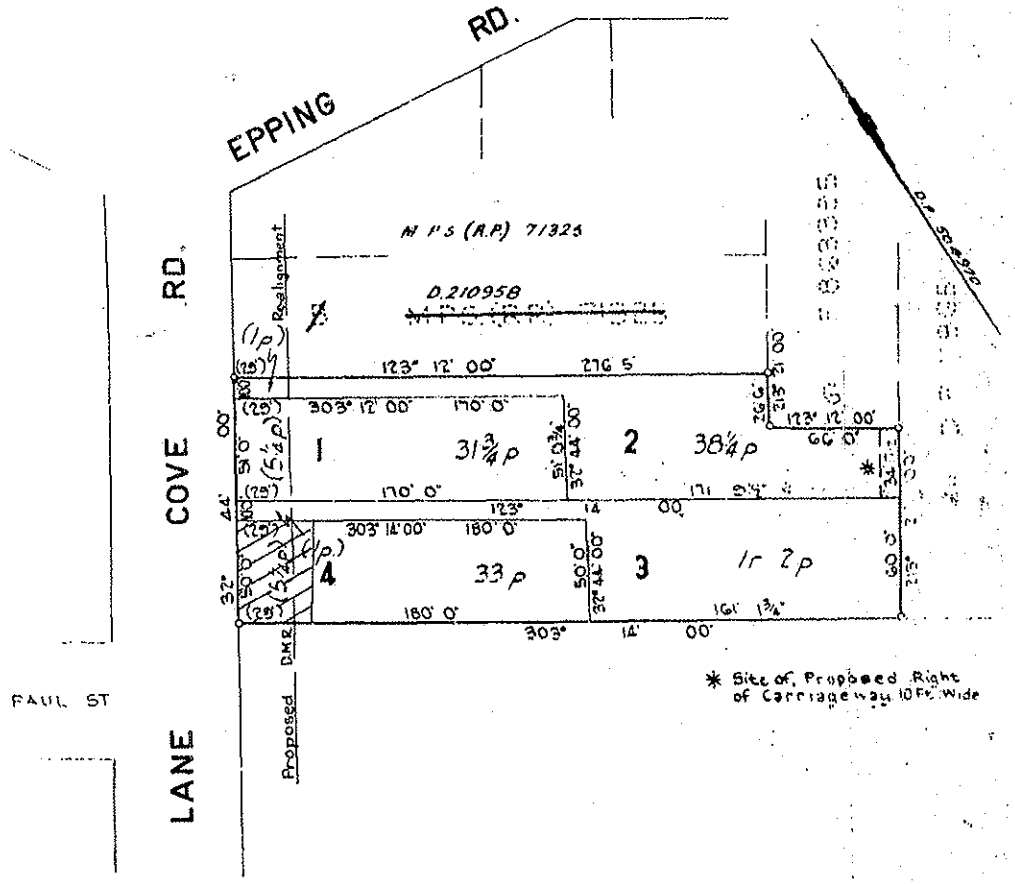
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

Witness B Bailey

SEE AUTO FOLIO
Registrar-General.

(Page 1) Vol. 9519 Fol. 134

PLAN SHOWING LOCATION OF LAND



ESTATE AND LAND REFERRED TO.

Estate in Fee Simple in Lot 4 in Deposited Plan 504970 in the Municipality of Ryde Parish of Hunters Hill and County of Cumberland.

FIRST SCHEDULE (Continued overleaf)

~~DOROTHY ETHEL LETTE, of North Ryde, Widow.~~

Dorothy Ethel Lette of North Ryde, Widow

Registrar General.

SECOND SCHEDULE (Continued overleaf)

1. Reservations and conditions, if any, contained in the Crown Grant(s) referred to in the said Deposited Plan.
2. ~~Restriction on user No. 455410 of the 5¼ perch part shown in the plan hereon — See Section 27E Main Roads Act, 1924. Entered 29-1-1957.~~ Cancelled M591202

Registrar General.

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

BY 1809 V. C. N. BLIGHT, GOVERNMENT PRINTER

FIRST SCHEDULE (continued)

REGISTERED PROPRIETOR	INSTRUMENT NATURE	NUMBER	DATE	ENTERED	Signature of Registrar-General
Dorothy Ethel Lette of whole excluding Lot 21 in D.P. 239969, and The Commissioner for Main Roads as regards the said Lot 21 in D.P. 239969 by Resumption T685650. Registered 18-10-1983.					[signature]

Reg Gen 18-10-1983

CANCELLED

SEE AUTO FOLIO

SECOND SCHEDULE (continued)

INSTRUMENT NATURE	NUMBER	DATE	PARTICULARS	ENTERED	Signature of Registrar-General	CANCELLATION		
AA Transfer	M591202	13-1-1972	The land hatched black in the plan hereon being lot 21 in D.P. 239969 is now road vested in The Commissioner for Main Roads	20-3-1972	[signature]			
Mortgage	S202430		to Yannathan Pty. Limited, Alexander Walter Bailey of Lidcombe, Fibrous Plaster Manufacturer and Joan Margaret Bailey his wife, as tenants in common - for tenancy see dealing.	6-1-1981	[signature]	Discharged	X244019	[seal]
S202430 Mortgage.	S833015		Variation. Registered 9-12-1981.		[signature]	Cancelled	X244019	[seal]
S202430 Mortgage.	T409166		Variation. Registered 15-2-1983.		[signature]	Cancelled	X244019	[seal]
S202430 Mortgage.			Mortgagees: Yannathan Pty. Limited in ¾ shares and Refede Pty Limited in ¼ share as tenants in common by Transfer [seal]91. Registered 18-8-1983.		[signature]	Cancelled	X244019	[seal]
AA T685650 Resumption:			The land hatched black in the plan hereon being Lot 21 in D.P. 239969 is now public road. Registered 18-10-1983		[signature]			
S202430 Mortgage.	T860744		Variation. Registered 6-12-1983		[signature]	Cancelled	X244019	[seal]
S202430 Mortgage	V400248		Variation. Registered 18-12-1984		[signature]	Cancelled	X244019	[seal]
S202430 Mortgage	W114221		Variation Registered 13-1-1986		[seal]	Cancelled	X244019	[seal]
S202430 Mortgage	W635792		Variation. Registered 4-12-1986		[seal]	Cancelled	X244019	[seal]

DP 239969
CT 14/1/72
M591202 TC Part Lot 21 in DP. 239969
S202430 M
S833015 V/M
T409166 V/M R
Lot 21 DP 239969 dedicated public road Gaz. 3-6-83 Fol. 2467
T695391 r/M c
T685650 R/A
Lot 21 DP 239969
T860744 V/M (S202430)
V400248 V/M R
W114221 V/M
W635792 V/M
X244019 DM R

FORM No. 184A NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR-GENERAL ARE CANCELLED

Appn. No. 18660

Reference to last certificate

Vol. 4455 Fol. 130

Deposited Plan No. 11865

New South Wales. [CERTIFICATE OF TITLE]

REGISTER BOOK.

Vol. 5386 Fol. 99

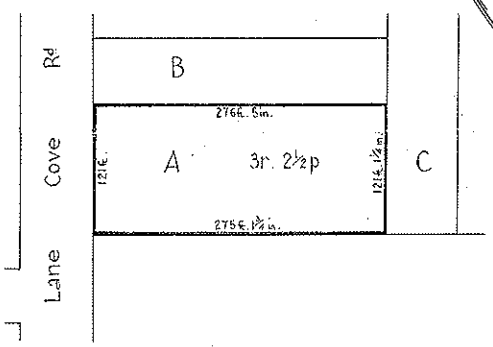
CANCELLED

DOROTHY ETHEL LETTE, wife of Henry Edward Lette, of North Ryde, Poultry Farmer, Transferee under Instrument of Transfer No.D210958 is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated in the Municipality of Ryde Parish of Hunters Hill, and County of Cumberland containing Three roods two and one half perches or thereabouts as shown in the plan hereon and therein edged red being Lot A in plan annexed to the said Instrument of Transfer No.D210958 and being part of 100 acres (Portion 42 of Parish) originally granted to James Weavers by Crown Grant dated the 11th day of August 1804.

In witness whereof I have hereunto signed my name and affixed my Seal, this Seventeenth day of July, 1943

Signed in the presence of W.P. Friend

Registrar General.



Scale 100ft. to one inch.

Notification Referred to.

No. F863394 DISCHARGE of within mortgage D210959 dated 20th February 1953

Produced 26th May 1953 and entered 19th August 1953 at 12 o'clock in the noon.

J. Wells

REGISTRAR GENERAL.

D/M 863396

This Deed is Cancelled and Certificate of Title Issued Vol. 6707 Fols 26-25 for Residue

J. Wells

QF863396 REGISTRAR GENERAL.

No. D210959 MORTGAGE dated 9th June, 1943, from the said Dorothy Ethel Lette to BANK OF NEW SOUTH WALES 22nd June, 1943.

Produced and entered 29th June, 1943, at 12 o'clock in the noon

REGISTRAR GENERAL

DOROTHY ETHEL LETTE, wife of Henry Edward Lette of North Ryde, Poultry Farmer, Transferee under Instrument of Transfer No.D210958 is now the [stamp: 1 February 2008] an Estate in Fee Simple,

subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated

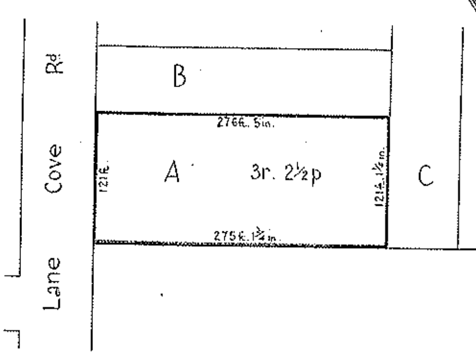
in the Municipality of Ryde Parish of Hunters Hill , and County of Cumberland

containing Three roods two and one half perches or thereabouts as shown in the plan hereon and therein edged red being Lot A in plan annexed to the said Instrument of Transfer No.D210958 and being part of 100 acres (Portion 42 of Parish) originally granted to James Weavers by Crown Grant dated the 11th day of August 1804.

In witness whereof I have hereunto signed my name and affixed my Seal, this Twentyseventh day of July, 1943

Signed in the presence of W.P. Friend }

(signature)
Registrar General.



Scale: 100ft. to one inch.

No. F863394 DISCHARGE of within mortgage D210959 dated 20th February 1953
Produced 28th May 1953 and entered 19th August 1953
at 12 o'clock ~~in the~~ noon.
J. Wells
REGISTRAR GENERAL.

D/M
F863394

This Deed is Cancelled and Certificates of Title issued
Vol. 6707 Fols 24 + 25
for Residue
J. Wells
OF863396 REGISTRAR GENERAL.

Notification Referenced to.

No. D210959 MORTGAGE dated 9th June, 1943,
from the said Dorothy Ethel Lette
to BANK OF NEW SOUTH WALES
23rd June, 1943,
Produced and entered 29th June, 1943,
at 12 o'clock ~~in the~~ noon
(signature)
REGISTRAR GENERAL

F863394 1/6/60

Appn. No. 18860

Reference to Last Titles

Vol. 5386 Fol. 99

" 5388 " 95

Deposited Plan No. 11865.

New South Wales.

[CERTIFICATE OF TITLE.]

REGISTER BOOK.

Vol. 6707 Fol. 26

Issued on Order No. F863396.

CANCELLED

DOROTHY ETHEL LETTE, of North Ryde, Widow, is now the proprietor of an Estate in Fee Simple, subject nevertheless to the reservations and conditions, if any, contained in the Grant hereinafter referred to, and also subject to such encumbrances, liens, and interests as are notified hereon, in That piece of land situated in the Municipality of Ryde Parish of Hunters Hill, and County of Cumberland containing One rood thirty five and one quarter perches or thereabouts as shown in the plan hereon and therein edged red being Lot E in plan lodged with Transfer No. F863395 and being part of 100 acres (Portion 42 of Parish) originally granted to James Weavers by Crown Grant dated the 11th day of August 1804.

In witness whereof I have hereunto signed my name and affixed my Seal, this Twenty-first day of August, 1953

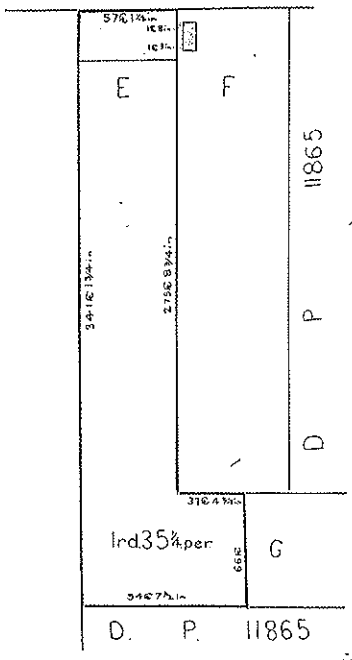
Signed in the presence of R.R. Fitzgerald

J. Wells

Registrar-General.

REGISTRAR GENERAL NEW SOUTH WALES

Lane Cove Rd



N

This land shown by pink colour in the plan hereon is subject to the restrictions on user imposed by Section 27E (6) Main Roads Act, 1924-1954. See No. G554109. Entered 20th January 1957.

J. Wells

REGISTRAR GENERAL

This deed is cancelled as to the whole

New Certificates of Title have issued for lots in Deposited Plan No. 504970 as follows:

Lots 1, 2, 3 & 4 Vol. 9519 Fols 132, 135, 133 & 134 respectively

J. Watson

REGISTRAR GENERAL

JAH.

1st February 2008