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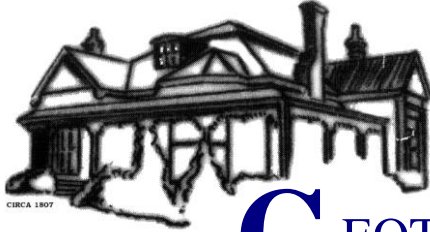
ABN 64 002 841 063



PRELIMINARY CONTAMINATION ASSESSMENT

**LOT 2 IN DP260476
RICHMOND ROAD, MARSDEN PARK**

REPORT NO 13552/1-AA 30 MAY 2016



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Job No: 13552/1
Our Ref: 13552/1-AA
30 May 2016

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Attention: Mr J Shek and Lydia DeGuzman

Dear Sir/Madam

re: **Lot 2 in DP260476**
Richmond Road, Marsden Park
Preliminary Contamination Assessment with Limited Sampling

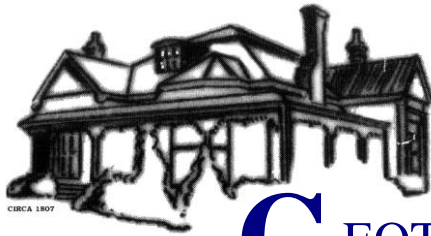
Please find herewith the preliminary contamination assessment report with limited sampling at the above site.

Reference should be made to the Executive Summary and Sections 14.0 and 15.0 of the report for the conclusion, recommendations and limitations of this assessment.

If you have any questions, please do not hesitate to contact the undersigned.

Yours faithfully
GEOTECHNIQUE PTY LTD

DANDA SAPKOTA
Senior Environmental Engineer



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EXECUTIVE SUMMARY

This executive summary presents a synopsis of a preliminary contamination assessment (PCA) with limited sampling for the site currently registered as Lot 2 in DP260476, located at Richmond Road, Marsden Park in the local government area of Blacktown.

The objective of the PCA with limited sampling was to determine the suitability of the site for the proposed use as a mixture of residential, retail, commercial, open space and recreational uses.

In order to achieve the objective, site reconnaissance, review of historical, geological and hydrogeological information, sampling and testing were carried out.

Based on this assessment, the site is considered suitable for the proposed residential subdivision, subject to the following:

- Additional assessment (by sampling and testing) beneath existing site features after their removal, including the underground storage tank. Prior to demolition, a hazardous materials survey of the residential dwellings and sheds should be carried out to determine the presence of the asbestos and/or lead paint, followed by any required remediation. A WorkCover-licensed Asbestos Assessor must be engaged to assess and issue an asbestos clearance certificate, if required.
- Detailed assessment (sampling and testing) in the vicinity of TP163, TP168 and TP195 to determine the extent of copper, zinc and/or lead contamination.
- Detailed assessment (sampling and testing) in the vicinity of TP156 to determine the extent of BaP contamination.
- Detailed assessment (sampling and testing) of the entirety of Stockpile 2 for potential contamination as only two sampling locations was carried out within the stockpile. Additional sampling and testing must be carried out to delineate the extent of asbestos and PCB contamination at location SP2-2.
- Detailed assessment (sampling and testing) in the vicinity of TP67, TP141, TP154, TP163, TP167, TP168 to determine the extent of friable and/ or non-friable asbestos. A WorkCover-licensed Asbestos Assessor must be engaged to assess and issue an asbestos clearance certificate.
- Assessment of dam water/water bodies within the site was beyond the scope of this assessment. If the existing dams/water bodies are to be breached, an assessment of water, dam wall and sediment should be carried out to determine the contamination status.
- Development of a remedial action plan (RAP) to remediate the areas with asbestos, metal, BaP, PCB contaminated soil or asbestos containing material (ACM), plus any other contamination identified through the recommended additional sampling and testing, followed by appropriate validation

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Executive Summary continued

It should be noted that this PCA with limited sampling was carried out in conjunction with geotechnical investigation. If any suspect materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos sheets/pieces/pipes, ash material, etc.) are encountered during any stage of future earthworks/site preparation/demolition/remediation or masked by grass/trees, an Unexpected Finds Management Protocol (Appendix E) should be implemented. In the event of contamination, detailed assessment, remediation and validation will be necessary.

Any imported fill must be assessed by a qualified environmental consultant, prior to importation, to ensure suitability for the proposed use. In addition, the imported fill must be free from asbestos, ash and odour, not be discoloured and not acid sulphate soil. The imported fill should either be virgin excavated natural material (VENM) or excavated natural material (ENM).

Reference should be made to Section 15.0 of the report, which sets out details of the limitations of the assessment

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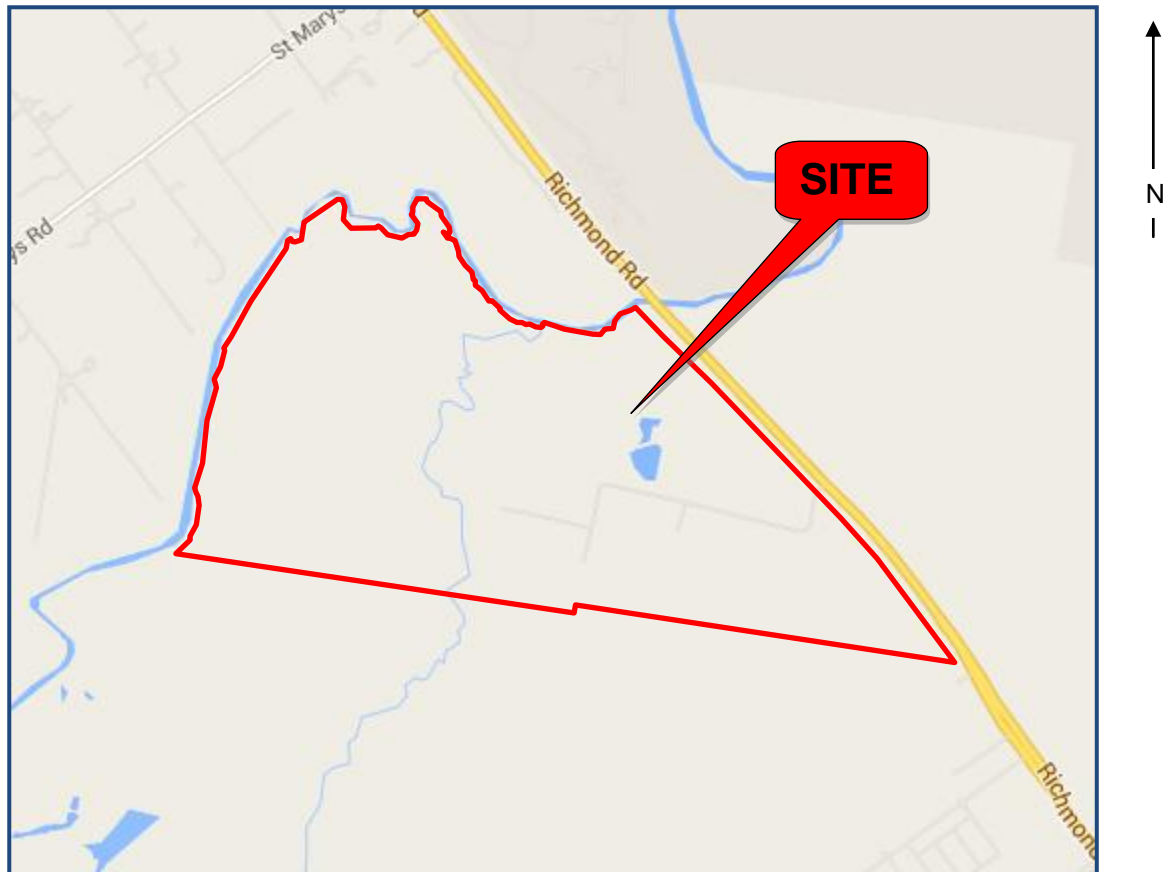
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Lot 2 in DP260476 – Richmond Road, Marsden Park

1.0 INTRODUCTION

This report presents the results of a preliminary contamination assessment (PCA) with limited sampling in conjunction with geotechnical investigation for the site currently registered as Lot 2 in DP260476, located at Richmond Road, Marsden Park, as indicated in Figure 1 below:

FIGURE 1



Map Data ©2016 Google

The objective of the assessment is to determine the suitability of the site for a mixture of residential, retail, commercial, open space and recreational uses.

This report was generally prepared in accordance with the NSW Environment Protection Authority (EPA), "Guidelines for Consultants Reporting on Contaminated Sites" – published by NSW Office of Environment and Heritage (NSW OEH, 2011), and to satisfy State Environmental Planning Policy (SEPP) No. 55 – Remediation of Land (DUAP/EPA 1998).

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2.0 SCOPE OF WORK

In order to achieve the objective of this assessment, the following scope of work was conducted in accordance with our fee proposal (ref. Q6519AD) dated 19 February 2016 and the letter of variation dated 4 March 2016:

- A desktop study of:
 - Historical aerial photographs.
 - NSW Land & Property Information records.
 - Section 149 (2) planning certificate.
 - NSW EPA Notices.
 - NSW WorkCover Records.
 - Soil and geological maps.
- An inspection to identify the site conditions and any areas of potential environmental concern based on visual and olfactory indicators.
- Recovery of soil samples for appropriate chemical analysis.
- Preparation and analysis of standard quality assurance (QA) and quality control (QC) samples.
- Assessment of the laboratory analytical results.
- Assessment of field and laboratory QA and QC.
- Assessment of the contamination status of the site.

3.0 SITE IDENTIFICATION

The site is located at Richmond Road, Marsden Park, in the local government area of Blacktown and is registered as Lot 2 in DP260476. The approximate area of the site is 217.633 hectares (ha).

Reference may be made to the deposited and cadastral plans in Appendix A for details of the location and dimensions of Lot 2 in DP260476.

4.0 SITE HISTORY

In order to formulate a picture of the site history and to assist in identification of any potential contamination, information including historical aerial photographs, NSW Land & Property Information records, Planning Certificate issued by council under Section 149 (2) of the Environmental Planning and Assessment Act 1979, and NSW EPA record of notices for contaminated land were reviewed. The information is presented in the following sub-sections.

4.1 Aerial Photographs

Aerial photographs taken in 1947, 1955, 1965, 1978, 1989, 1994 and 2004 were examined. Copies of the aerial photographs are kept in the offices of Geotechnique, and are available for examination upon request.

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1947	The site is vacant and covered with bushland. Cleared areas are identified in the central portion, later known as FG Pace poultry farm. The surrounding areas are either bushland or vacant land. Dirt tracks are noted within the eastern portion of the site
1955	The site is primarily cleared, however what appears to be trees and shrubs are noted sparsely across the site. Disturbed land patches are noted to the northern/north eastern portion of the site. The surrounding areas are either part of rural land/ bushland or vacant land.
1965	There has been further clearance of shrubs and trees. There has been a slight variation (since 1955) although a more prominent clearance has occurred in the surrounding areas. The surrounding areas are either bushland or vacant land.
1978	The site has been cleared of almost all trees and shrubs, although they can be found sporadically. Areas surrounding the site are either bushland or vacant land. There is an observable difference in surrounding areas with the land being altered.
1989	The site appears to have been cleared with some buildings and shed noted within the mid southern portion of the site (FG pace poultry farm). The surrounding land is primarily rural residential, with residential areas observed in the outer areas of the photograph.
1994	The site is grass covered. A long metal shed and animal carousel has been constructed towards the eastern side. The surrounding areas are similar to 1989.
2004	The surrounding lands were observed to be vacant with some form of construction work occurring towards the south of the site.

4.2 NSW Land & Property Information Records

The chronological list of proprietors for the site is summarised in the table below. NSW Land & Property Information records (Appendix A) indicate that private proprietors owned the site from 1935 to the present time.

Year	Proprietor
2014 – 2016	Clydesdale Property Development Group Pty Ltd
2002 – 2014	Francis George Pace
1963 – 2002	Associated Dairies Pty Ltd previously known as Associated Dairies (Toongabbie) Pty Limited
1961 – 1963	Permanent Trustee Company of New South Wales and Matthew McFadden, solicitor
1945 – 1961	Marcia Evelyn Williams, spinster
1944 – 1945	Keitha Dawn James, spinster and Norman Hampden Mathews, company director
1935 – 1944	Joseph Ernest James, retired auctioneer

4.3 Section 149 (2) Planning Certificate

The Planning Certificates (Cert. No 12-4393) under Section 149 (2) Environmental Planning and Assessment Act 1979 for Lot 142 in DP14631, issued by Blacktown City Council on 26 July 2012, indicated that:

- The site is zoned 1(a) - General Rural.
- The site does not include or comprise a critical habitat.
- The site is not within a conservation area.
- The site contains an item of environmental heritage under the protection of Blacktown Local Environmental Plan, 1998.

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- The site is not affected by the operation of Section 38 or 39 of the *Coastal Protection Act 1979*, but only to the extent that the Council has been so notified by the Department of Services, Technology and Administration.
- The site is not within an area proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act, 1961*.
- The site is not affected by any road widening or road realignment under Division 2 of Part 3 of the *Roads Act 1993*, any environmental planning instrument or any resolution of the council.
- The site is shown flood prone on mapping provided by the Department of Planning.
- No matters arising in the *Contaminated Land Management (CLM) Act 1997*.
- The site is not affected by a policy that restricts the development of the site because of the likelihood of acid sulfate soils.

Reference may be made to Appendix B for copies of the Section 149 (2) Certificate.

4.4 NSW EPA Record of Notices

The NSW EPA publishes record of notices for contaminated lands under Section 58 of the CLM Act 1997. The notices relate to investigation and/or remediation of site contamination considered to pose a significant risk of harm under the definition in the CLM Act.

A search of the EPA records on the 7 April 2016 revealed no notices issued for the site.

It should be noted that the EPA record of notices for Contaminated Land does not provide a record of all contaminated lands in NSW.

The EPA issues environment protection licences to owners or operators of various industrial premises under the Protection of the Environment Operations (POEO) Act to control the air, noise, water and waste impacts of an activity.

A search of the POEO Public Register on 7 April 2016 found no records for the site.

NSW EPA and the POEO Public Register records are detailed in Appendix C of this report.

4.5 NSW WorkCover Records

Review of the previous report (Report No 12576/1-AA dated February 2012) prepared by Geotechnique Pty Ltd (Geotechnique) indicated that an application was submitted in March 1998 by Associated Dairies Pty Ltd for a renewal of a licence to keep one liquid cylinder store of LPG of 190kg capacity as part of dairy cattle farming. The application also acknowledges the presence of the following in the site:

- Approximate 90-100 (kg?) Liquid Nitrogen.
- Approximately 1000L petrol underground tank.
- Approximately 10,000L diesel above ground tank.
- Approximately 1000L pool of chorine (liquid).
- Various cleaning acids and alkalies.

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Lot 2 in DP260476 – Richmond Road, Marsden Park

5.0 SITE CONDITION AND SURROUNDING ENVIRONMENT

5.1 Site Condition

At the time of inspection and field sampling by an Environmental Engineer from Geotechnique on 7 to 11, 15, 17, 18, 22 to 24, 29 and 30 March 2016, the site was covered with short to medium length grass, and contained various site features, as detailed on Drawing No 13522/1-AA1.

Within the central portion of the site there was an unsealed road to the north, and a dam with water situated in the south eastern and north eastern portion of the site.

In the open area, there were no obvious ash materials, odours, or discolouration that would indicate the potential for contamination, with the exception of fibro-cement pieces that were found on the stockpile and at some isolated locations.

5.2 Surrounding Environment

At the time of field work, the neighbouring properties were as follows:

- To the north and west: Richmond Road and South Wianamatta Creek.
- To the east: Vacant land and Richmond Road.
- To the south: Vacant land and on-going construction works conducted by Western Earth Moving (WEM).

There were no air emissions emanating from the neighbouring properties.

6.0 TOPOGRAPHY, GEOLOGY & HYDROGEOLOGY

In general, ground surface of the site is relatively flat.

The Soil Landscape Map of Penrith (soil Landscape Series Sheet 9030, Scale 1:100,000, 1989), prepared by the Soil Conservation Service of NSW, indicates that the site is located within the Blacktown and Berkshire landscape area, and typically consists of highly plastic and relatively impermeable residual or fluvial soil.

The Geological Map of Penrith (Geological Series Sheet 9030, Scale 1:100,000, Edition 1, 1991), published by the Department of Minerals and Energy, indicates the residual soils within the site to be underlain by Triassic Age Shale of the Wianamatta Group, comprising shale, carbonaceous claystone, claystone, laminite, fine to medium grained lithic sandstone, rare coal and tuff. The Geological map also indicates that the fluvial soils within the site to be underlain by Tertiary Age Londonderry Clay, comprising of clay patches of ferruginised, consolidated sand.

Reference should be made to Test Pit Logs in Appendix D for descriptions of the soils encountered during sampling. The sub-surface profile at the sampling locations is generalised as follows:

Topsoil	Clayey silt, silty clay, low to medium plasticity, brown, trace root fibres. Topsoil was encountered to depths ranging from 100mm to 500 mm below the existing ground level (EGL). Topsoil was encountered in the following test pits: TP1 – TP28, TP31 – TP40, TP44 – TP48, TP50 – TP52, TP54 – TP65, TP68 – TP73, TP75 – TP80, TP83 – TP92, TP97 – TP129, TP132 – TP136, TP142 – TP146, TP148 – TP150, TP164, TP169 – TP170, TP175 – TP180, TP187, TP191 – TP194, TP196 – TP198, TP200 – TP204, TP206, TP208, TP210, TP212 – TP237 and TP240 – TP250, underlain by natural clayey silt, silty clay or silty sand.
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Fill	<p><u>Type 1:</u> 150mm to 1500mm thick silty clay, low to medium plasticity, brown, with/without brick and/or concrete pieces/cobbles/boulders and/or fine to coarse grained gravel, trace/without plastics and/or wires with/without root fibres, were encountered in TP41, TP42, TP43, TP49, TP66, TP181 and TP182 underlain by silty clay, TP158 underlain by fill</p> <p><u>Type 2:</u> 200mm to 1800mm thick silty clay, medium plasticity, brown, with/without fine to coarse grained gravel, trace/without boulders, with/without brick/brick fragments, with/without concrete pieces/fragments, inclusion/without cobbles and boulders with/without demolition waste, with/without wooden posts, with/without metal pipes trace/with/without root fibres were encountered in TP53, TP67, TP74, TP82, TP137, TP140, TP141, TP154, TP155, TP162, TP163, TP182, TP183, TP195, TP207, TP209. TP211 and TP232 underlain by silty clay, TP156 and TP159 terminated due to refusal, TP158 and TP161 underlain by fill and TP184 terminated due to refusal on fill</p> <p><u>Type 3:</u> 150mm to 2600mm thick silty clay, medium to high plasticity, grey-brown/dark brown, red-orange, red-brown with/without fine to coarse grained gravel, inclusion of ironstone gravel with/without root fibres, with/without fibro-cement pieces, with/without glass and wood pieces, with/without scrap metal, with/without demolition waste, with/without general waste were encountered in TP81, TP93, TP95, TP157, TP158, TP161, TP165, 158, TP171, TP172, TP173 and TP174 underlain by silty/shaley clay, TP166 terminated due to limit of backhoe reach, TP167 terminated and TP168 terminated due to difficulty of excavation in fill and water</p> <p><u>Type 4:</u> 200mm to 900mm thick gravelly (roadbase) clay, low to medium plasticity, inclusion/without coal brown were encountered in TP147, TP151, TP153 and TP205 underlain by silty clay</p> <p><u>Type 5:</u> 300mm to 900mm thick silty sand, fine grained, brown, inclusion of ironstone were encountered in TP152 underlain by silty clay and TP157 underlain by fill</p> <p><u>Type 6:</u> 300mm to 1800mm thick demolition waste, with silty clay, medium plasticity, brown, with/without root fibres were encountered in TP160 underlain by silty clay</p>
Natural Soil	Silty sand, fine grained, brown, Clayey silt, silty, gravelly, shaley clay, low to high plasticity, yellow/brown, red brown, orange-red, red mottled grey, grey mottled red, grey encountered beneath the topsoil, fill or on the surface

Several stockpiles noted within the site comprised silty clay, low to medium plasticity, brown; demolition waste (including concrete gravel, brick and brick fragments with silty sandy soil within the large stockpile extending towards the east of the Stage 1 Development); silty sand and silty clay combined with gravel, concrete and bitumen.

Within the observed open and accessible areas, there were no obvious ash materials, odour or discolouration in the sampling locations, with the exception of the presence of fibro cement pieces found in stockpiles and at isolated locations.

Although the site is relatively flat, surface run-off could occur to the north due to the slight slope. There are localised dams noted within the site. South/Wianamatta Creek is located along the north western boundary, and Little Creek is located near the central portion of the site. Obvious local depressions that might capture or divert stormwater run-off were observed within the site.

A site-specific groundwater analysis was outside the scope of this assessment.

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Lot 2 in DP260476 – Richmond Road, Marsden Park

7.0 POTENTIAL FOR CONTAMINATION / CONCEPTUAL SITE MODEL

Based on the preceding sections, the potential for contamination is considered to be as follows:

Area of Potential Environmental Concern	Rationale / Detail	Potential Contaminant ¹
The site	The use of agricultural chemicals and fertilisers for the market garden activities	Metals, Organochlorine Pesticides (OCP)
In the vicinity of building and shed, site features, including buildings and shed (S/F# 3, 7 12, 13, 14, 15, 16, 17, 22)	Building materials might contain asbestos. Degradation of metal features. Possible pest control activities in the vicinity of the house and shed	Asbestos Containing Material (ACM), Fibrous Asbestos, Asbestos Fines, Heavy Metals, Organochlorine Pesticides (OCP)
At and in the vicinity of metal features and/or scrap metals (S/F# 3, 5, 6, 8, 11, 18, 19, 25, 27, 28, 29, 31, 38, 40)	Degradation of metals.	Heavy Metals
Potential fill materials beneath the house, timber shed and concrete hardstands, etc. Potential fill and/or stockpiles materials in the open area (S/F# 2, 4, 9 and 30).	Potential for filling to have taken place for levelling the site. The fill materials could have been imported from unknown sources, therefore there is potential for the fill materials to be contaminated.	Heavy Metals, Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), OCP, Polychlorinated Biphenyls(PCB) and Asbestos
Underground fuel storage tank (S/F# 30)	Potential leakage of unleaded mineral spirits into soil and groundwater. Corrosion of potential metal tanks.	Heavy Metals, TPH, BTEX, PAH, VOC
Dams & Depressions/trench/drainage	There is a potential for contaminants to accumulate in the sediment and water resulting from surface water run-off over area which might have been contaminated. Potential for filling to have taken place to form the dam wall.	Metals, OCP, TPH, BTEX, PAH, PCB, Phenols, asbestos and/or nutrients
Potential waste masked by overgrown shrub and grass.	Any illegal dumping of the waste from unknown sources.	Metals, Total Petroleum Hydrocarbons (TPH), Benzene, Toluene, Ethylbenzene and Xylenes (BTEX), Polycyclic Aromatic Hydrocarbons (PAH), OCP, Polychlorinated Biphenyls(PCB), Phenols, Cyanide and Asbestos
Poultry Farm	Potential for filling to have taken place for levelling the site. The fill materials could have been imported from unknown sources, therefore there is potential for the fill materials to be contaminated.	Metals, OCP, E.Coli, Faecal Coliforms, Salmonella sp., Nitrogen, ammonia, phosphorus

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Area of Potential Environmental Concern	Rationale / Detail	Potential Contaminant ¹
Graveyard (S/F# 39)	<p>From human body, potential contaminants, could release.</p> <p>Formaldehyde is used as preservative for the deceased remains and sometimes also present in resin and paints of timber coffins and caskets.</p>	Heavy metal, Total Organic Carbon (TOC), Ammonia, Calcium, Magnesium, Sodium, Potassium, Sulfate, Chloride and iron, Formaldehyde, Microbes, nutrients

1. The suite of potential contaminants identified in the above table should be reviewed subject to the findings of inspection of the site after clearance.
S/F# Site Feature Number

Off-site impacts of any contaminants are generally governed by the transport media available and likely receptors. The most common transport media are water and wind, whilst receptors include uncontaminated soils, groundwater, surface waterbodies, humans, flora and fauna.

Migration of any soil contaminants to the deeper soil and/or groundwater regime would generally be via leaching from the contaminated soil, facilitated by infiltration of surface water. Given that the natural soil beneath the site is relatively impermeable (refer to Section 6.0 for the regional geology information), the potential for any contaminants migrating from the contaminated soil to the groundwater table below is considered low. Furthermore, the relatively impermeable clay layer would have minimised the potential for any contaminants migrating to deeper soil.

8.0 SAMPLING & ANALYSIS PLAN AND SAMPLING METHODOLOGY

Sampling and analyses was carried out to obtain a reasonable assessment of the following;

1. Nature and location of any soil contaminants within the site.
2. The risks that the contaminants (if present) pose to human health and/or the environment under the conditions of the proposed land uses.

Sampling was carried on 7 to 11, 15, 17, 18, 22 to 24, 29 and 30 March 2016 by Environmental Engineers from Geotechnique, who were responsible for visually assessing the site, nominating the sample locations, recovery of soil samples, preparation of QA/QC samples, and logging the sub-surface profile encountered at each sample location.

Based on the fee proposal (ref. Q6519AD) dated 19 February 2016, samples were recovered in conjunction with the geotechnical investigation. Test pits TP213 to TP215 were not excavated due to site access issues.

Based on the "Sampling Design Guidelines for Contaminated Sites" 1995 EPA, approximately 11 sampling locations per hectare are required to characterise the site.

The sampling procedures adopted were as follows:

- The bulk soil sample from the test pit was recovered from the depth interval nominated by the Environmental Engineer.

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- The representative soil sample was recovered directly from the middle portion of the bulk bucket sample, using a stainless steel trowel. The stainless steel trowel was decontaminated prior to use, in order to prevent cross contamination.
- The soil sample was immediately transferred to a labelled, laboratory supplied, 250ml glass jar and sealed with an airtight, Teflon screw top lid. The fully filled jar was then placed in a chilled container.

In order to ensure the analytical performance of the primary laboratory, duplicate and split samples were prepared for analyses. Samples were kept in labelled laboratory supplied glass jars (acid-washed and solvent-rinsed), and sealed with an airtight screw top Teflon lids. The fully filled jars were placed in a chilled container.

A rinsate water sample was collected and placed in a glass bottle supplied by the laboratory at completion of the each day of field work. The fully filled bottle was labelled and placed in a chilled container.

At completion of field sampling, the chilled container was transported to our Penrith office, and the chilled container was transferred to a refrigerator where the temperature was maintained below 4 °C.

The primary samples and QA/QC samples in the chilled container were forwarded under Chain of Custody (COC) condition to the primary testing laboratory of SGS Environmental Services (SGS). Inter-laboratory duplicate (split) sample was forwarded to the secondary testing laboratory of Envirolab Services Pty Ltd (Envirolab). Both SGS and Envirolab are NATA accredited.

On receipt of the samples and COC, the laboratories returned the Sample Receipt Confirmations verifying the integrity of all samples received.

Discrete soil samples were composited in the laboratory for chemical analysis. Compositing of soil samples is suggested in "*Sampling Design Guidelines for Contaminated Sites*" (NSW EPA 1995).

The methodology for compositing samples was generally adapted from "*Composite Sampling, National Environmental Health Forum Monographs, Soil Services No 3*" (Lock 1996), as follows:

- Three equal-mass constituent samples were included in a composite sample.
- Each constituent sample was homogenised before sub-sampling and compositing of material was undertaken.

The following table details the compositing undertaken by the primary laboratory, as specified in the COC prepared by Geotechnique.

Composite Sample	Sub-Samples
C1	TP1 (0-0.15m) + TP2 (0-0.15m) + TP3 (0-0.15m)
C2	TP4 (0-0.15m) + TP5 (0-0.15m) + TP6 (0-0.15m)
C3	TP7 (0-0.15m) + TP8 (0-0.15m) + TP9 (0-0.15m)
C4	TP10 (0-0.15m) + TP11 (0-0.15m) + TP12 (0-0.15m)
C5	TP13 (0-0.15m) + TP14 (0-0.15m) + TP15 (0-0.15m)
C6	TP16 (0-0.15m) + TP17 (0-0.15m) + TP18 (0-0.15m)
C7	TP19 (0-0.15m) + TP20 (0-0.15m) + TP21 (0-0.15m)

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Composite Sample	Sub-Samples
C8	TP22 (0-0.15m) + TP23 (0-0.15m) + TP24 (0-0.15m)
C9	TP26 (0-0.15m) + TP27 (0-0.15m) + TP28 (0-0.15m)
C10	TP29 (0-0.15m) + TP30 (0-0.15m) + TP31 (0-0.15m)
C11	TP32 (0-0.15m) + TP33 (0-0.15m) + TP34 (0-0.15m)
C12	TP35 (0-0.15m) + TP36 (0-0.15m) + TP40 (0-0.15m)
C13	TP37 (0-0.15m) + TP38 (0-0.15m) + TP39 (0-0.15m)
C14	TP44 (0-0.15m) + TP45 (0-0.15m) + TP46 (0-0.15m)
C15	TP47 (0-0.15m) + TP48 (0-0.15m) + TP49 (0-0.15m)
C16	TP50 (0-0.15m) + TP51 (0-0.15m) + TP52 (0-0.15m)
C17	TP54 (0-0.15m) + TP55 (0-0.15m) + TP56 (0-0.15m)
C18	TP57 (0-0.15m) + TP58 (0-0.15m) + TP59 (0-0.15m)
C19	TP60 (0-0.15m) + TP61 (0-0.15m) + TP62 (0-0.15m)
C20	TP63 (0-0.15m) + TP64 (0-0.15m) + TP65 (0-0.15m)
C21	SP1-1 (0-0.15m) + SP1-2 (0-0.15m) + SP1-3 (0-0.15m)
C22	TP68 (0-0.15m) + TP69 (0-0.15m) + TP70 (0-0.15m)
C23	TP71 (0-0.15m) + TP72 (0-0.15m) + TP73 (0-0.15m)
C24	TP75 (0-0.15m) + TP76 (0-0.15m) + TP77 (0-0.15m)
C25	TP78 (0-0.15m) + TP79 (0-0.15m) + TP80 (0-0.15m)
C26	TP84 (0-0.15m) + TP85 (0-0.15m) + TP86 (0-0.15m)
C27	TP87 (0-0.15m) + TP88 (0-0.15m) + TP89 (0-0.15m)
C28	TP90 (0-0.15m) + TP91 (0-0.15m) + TP92 (0-0.15m)
C29	TP94 (0-0.15m) + TP96 (0-0.15m) + TP97 (0-0.15m)
C30	TP98 (0-0.15m) + TP99 (0-0.15m) + TP100 (0-0.15m)
C31	TP101 (0-0.15m) + TP102 (0-0.15m) + TP103 (0-0.15m)
C32	TP104 (0-0.15m) + TP105 (0-0.15m) + TP106 (0-0.15m)
C33	TP107 (0-0.15m) + TP108 (0-0.15m) + TP109 (0-0.15m)
C34	TP110 (0-0.15m) + TP111 (0-0.15m) + TP112 (0-0.15m)
C35	TP113 (0-0.15m) + TP114 (0-0.15m) + TP115 (0-0.15m)
C36	TP116 (0-0.15m) + TP117 (0-0.15m) + TP118 (0-0.15m)
C37	TP19 (0-0.15m) + TP20 (0-0.15m) + TP21 (0-0.15m)
C38	TP122 (0-0.15m) + TP123 (0-0.15m) + TP127 (0-0.15m)
C39	TP125 (0-0.15m) + TP126 (0-0.15m) + TP124 (0-0.15m)
C40	TP128 (0-0.15m) + TP129 (0-0.15m) + TP130 (0-0.15m)
C41	TP131 (0-0.15m) + TP132 (0-0.15m) + TP133 (0-0.15m)
C42	TP134 (0-0.15m) + TP135 (0-0.15m) + TP142 (0-0.15m)
C43	TP143 (0-0.15m) + TP144 (0-0.15m) + TP145 (0-0.15m)
C44	TP169 (0-0.15m) + TP170 (0-0.15m) + TP179 (0-0.15m)
C45	TP171 (0-0.15m) + TP172 (0-0.15m) + TP173 (0-0.15m)
C46	TP172 (0.5-0.8m) + TP173 (0.5-0.8m) + TP174 (0-0.15m)
C47	TP172 (1.0-1.3m) + TP174 (0.5-0.8m) + TP184 (0.5-0.8m)
C48	TP136 (0-0.15m) + TP137 (0-0.15m) + TP138 (0-0.15m)
C49	TP140 (0-0.15m) + TP141 (0-0.15m) + TP146 (0-0.15m)
C50	TP148 (0-0.15m) + TP149 (0-0.15m) + TP150 (0-0.15m)
C51	TP151 (0-0.15m) + TP152 (0-0.15m) + TP153 (0-0.15m)
C52	TP154 (0-0.15m) + TP154 (0.5m-0.8m) + TP154 (1.0-1.3m)

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Composite Sample	Sub-Samples
C53	TP157 (0-0.15m) + TP158 (0-0.15m) + TP159 (0-0.15m)
C54	TP181 (0-0.15m) + TP182 (0-0.15m) + TP183 (0-0.15m)
C55	TP185 (0-0.15m) + TP186 (0-0.15m) + TP187 (0-0.15m)
C56	TP188 (0-0.15m) + TP189 (0-0.15m) + TP190 (0-0.15m)
C57	TP160 (0-0.15m) + TP163 (0.5-0.8m) + TP163 (1.0-1.3m)
C58	TP167 (0-0.15m) + TP168 (0-0.15m) + TP168 (0.5-0.8m)
C59	TP192 (0-0.15m) + TP193 (0-0.15m) + TP194 (0-0.15m)
C60	TP195 (0-0.15m) + TP196 (0-0.15m) + TP197 (0-0.15m)
C61	TP198 (0-0.15m) + TP200 (0-0.15m) + TP201 (0-0.15m)
C62	TP202 (0-0.15m) + TP203 (0-0.15m) + TP204 (0-0.15m)
C63	TP206 (0-0.15m) + TP207 (0-0.15m) + TP208 (0-0.15m)
C64	TP210 (0-0.15m) + TP228 (0-0.1m) + TP237 (0-0.15m)
C65	TP211 (0-0.15m) + TP220 (0-0.15m) + TP221 (0-0.15m)
C66	TP222 (0-0.15m) + TP223 (0-0.15m) + TP224 (0-0.15m)
C67	TP229 (0-0.15m) + TP230 (0-0.15m) + TP236 (0-0.15m)
C68	TP212 (0-0.15m) + TP219 (0-0.15m) + TP225 (0-0.15m)
C69	TP216 (0-0.15m) + TP217 (0-0.15m) + TP218 (0-0.1m)
C70	TP226 (0-0.15m) + TP227 (0-0.15m) + TP231 (0-0.15m)
C71	TP232 (0-0.15m) + TP233 (0-0.15m) + TP234 (0-0.15m)
C72	TP235 (0-0.15m) + TP238 (0-0.15m) + TP239 (0-0.15m)
C73	TP240 (0-0.15m) + TP241 (0-0.15m) + TP242 (0-0.15m)
C74	TP243 (0-0.15m) + TP244 (0-0.15m) + TP245 (0-0.15m)
C75	TP247 (0-0.1m) + TP248 (0-0.15m) + TP249 (0-0.15m)

The soil profile encountered and described in Section 6.0 did not reveal any obvious visual (staining, ash materials) or olfactory indicators of potential contamination.

As a result, and based on the potential for contamination mentioned in Section 7.0, composited soil samples were selected for analysis as follows:

- All seventy five composite samples were analysed for Metals including, arsenic (As), cadmium (Cd), Chromium (Cr), copper (Cu), lead (Pb), mercury (Hg), nickel (Ni) and zinc (Zn), and fifty three samples were also selected for analysis of OCP.
- Fifty nine discrete samples, including from fill and stockpiles were selected for analysis of metals, thirty one samples were analysed for TPH, thirty eight samples were analysed for PAH, and twenty one samples were analysed for PCB.
- Fifty two samples were selected for analysis of asbestos.

9.0 FIELD QUALITY ASSURANCE AND QUALITY CONTROL

9.1 Sampling Personnel

Geotechnique undertook all the sampling associated with this assessment. Environmental Engineers from Geotechnique (Saurabh Sapkota and Justin Hofmann) visually assessed the site, nominated sample locations, supervised the excavation of each sample location, logged the soil profile encountered, recovered soil samples, prepared QA/QC samples, and packaged the samples.

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At commencement of employment, both Saurabh Sapkota and Justin Hofmann underwent supervised training in Geotechnique procedures for sampling and logging.

9.2 Decontamination Procedures

Soil samples were transferred from sample locations to the laboratory supplied glass jar using a decontaminated stainless steel trowel. The trowel was used to divide the soil sample into two portions to prepare duplicate and split samples. Decontamination of the trowel involved the following:

- Removal of soil adhering to the trowel by scrubbing with a brush.
- Washing the trowel thoroughly in a solution of phosphate free detergent (Decon 90) using brush.
- Rinsing the trowel thoroughly with distilled water.
- Repeating the washing / rinsing steps and rinsing with distilled water.
- Drying the trowel with clean disposable towels.

9.3 Rinsate Samples

Twelve rinsate water samples were collected during field sampling on 7, 9 and 10, 11, 15, 17, 18, 23, 24, 29 and 30 March 2016.

The rinsate water samples were analysed for Metals, OCP, TRH and/or PAH. The test results for the rinsate water sample are summarised in Table A1 to A3.

The actual laboratory test results certificates for the rinsate sample is kept in the offices of Geotechnique, and can be provided upon request.

As shown in Tables A1 to A3, all concentrations of analytes in the rinsate samples were less than laboratory limits of reporting, which indicates that adequate decontamination had been carried out in the field.

9.4 Trip Spike Samples

Trip spike samples are obtained from the laboratory on a regular basis, prior to conducting field sampling where volatile substances are suspected. The samples are held in the Penrith office of Geotechnique, at less than 4°C, for a period of not more than seven days. During the field work, the trip spike sample was kept in the chilled container with soil samples recovered from the site. The trip spike sample was then forwarded to the primary laboratory together with the soil samples recovered from the site.

The laboratory prepares the trip spike by adding a known amount of pure petrol standard to a clean sand sample. The sample is mixed thoroughly to ensure a relatively homogenous distribution of the spike throughout the sample. When the sample is submitted for analysis, the same procedure is adopted for testing as for the soil samples being analysed from the site.

The purpose of the trip spike is to detect any loss or potential loss of volatiles from the soil samples during field work, transportation, sample extraction or testing.

Trip spike samples (TS2 to TS9) were forwarded to the primary analytical laboratory with the samples collected from the fill areas or suspected area for volatiles, and were tested for BTEX. On the first day of the sampling, no suspected volatiles were encountered, and thus no trip spike sample was prepared.

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The test results for the trip spike sample, reported as a percentage recovery of the applied and known spike concentrations, are shown in Tables B1 and B2. Copies of the actual laboratory test results certificates of the trip spike sample are kept in the offices of Geotechnique and can be provided upon request.

As indicated in Tables B1 and B2, the results show a good recovery of the spike concentrations, ranging from 74% and 113%. The concentrations in this case would still be considerably less than the relevant assessment criteria (70% to 130% recovery) adopted. Furthermore, all BTEX results were less than laboratory detection limits, and there were no visible or olfactory indication of hydrocarbon contamination.

Based on the above, it is considered that any loss of volatiles from the recovered samples that might have occurred would not affect the outcome / conclusions of this report.

9.5 Duplicate Samples

A field duplicate sample was prepared in the field through the following processes:

- A larger than normal quantity of soil was recovered from the sample location selected for duplication.
- The sample was placed in a decontaminated stainless bowl and divided into two portions, using the decontaminated trowel.
- One portion of the sub-sample was immediately transferred, using the decontaminated trowel, into a labelled, laboratory supplied, 250ml glass jar and sealed with an airtight, Teflon screw top lid. The fully filled jar was labelled as the duplicate sample and immediately placed in a chilled container.
- The remaining portion was stored in the same way and labelled as the original sample.
- The sub-samples of field duplicate sample were composited by the laboratory in the same way as the original samples.

Duplicate samples were prepared on the basis of sample numbers recovered during the field work. The duplicate sample frequency was computed using the total number of samples analysed as part of this assessment. The duplicate sample frequencies computed are as follows:

- Metals: 134 samples analysed; 7 duplicates; 5.2% frequency
- OCP: 53 samples analysed; 7 duplicates; 13.2% frequency

The NEPM 1999 (April 2013) recommends a duplicate frequency of at least 5%.

The duplicate laboratory test results are summarised in Tables C1 to C7.

A comparison was made of the laboratory test results for the duplicate sample with the original sample and the Relative Percentage Differences (RPD) was computed to assess the accuracy of the laboratory test procedures. RPD within 30% are generally considered acceptable. However, this variation can be higher for organic analysis than for inorganics and for low concentrations of analytes.

As shown in Tables C1 to C7, the comparisons between the duplicate and corresponding original sample indicated generally acceptable RPD, with the exception of higher RPDs ranging from 35% to 67% for arsenic, chromium, copper, lead and mercury, mainly due to lower concentrations and /or heterogeneity of the samples analysed. Therefore, the test results provided by SGS are of adequate accuracy and reliability for this assessment.

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9.6 Inter-laboratory Duplicate (Split) Sample

The inter-laboratory duplicate (split) sample provides a check on the analytical performance of the primary laboratory. The split sample was prepared on the basis of sample numbers recovered during field work, and the analyses undertaken by the primary laboratory.

The composite split sample was prepared in the same manner as the duplicate sample.

Sub-samples of the split sample were forwarded to a secondary laboratory (Envirolab) and composited for analysis.

The split sample frequency was computed using the total number of samples analysed as part of this assessment. The split sample frequencies computed are as follows:

Metals:	134 samples analysed;	7 splits;	5.2% frequency
OCP:	25 samples analysed;	7 splits;	13.2% frequency

The split sample frequency adopted complies with the NEPM, which recommends a frequency of 5%.

The results are summarised in Tables D1 to D7.

Based on Schedule B (3) of the NEPM 1999 (April 2013) the difference in the results between the split samples should generally be within 30% of the mean concentration determined by both laboratories, i.e., RPD should be within 30%. However, this variation can be higher for organic analysis than for inorganics and for low concentrations of analytes.

As shown in Table D1 to D7, the comparisons between the split and corresponding original samples indicated generally acceptable RPD, with the exception of higher RPDs ranging from 31% to 106% for arsenic, chromium, copper, lead, nickel and zinc, mainly due to the lower concentrations and /or heterogeneity of the samples analysed. Therefore, the variations are not considered critical and the test results provided by the primary laboratory are deemed reliable for this assessment.

10.0 LABORATORY QUALITY ASSURANCE AND QUALITY CONTROL

Geotechnique uses only laboratories accredited by the NATA for chemical analyses. The laboratories also incorporate quality laboratory management systems to ensure that trained analysts using validated methods and suitably calibrated equipment produce reliable results.

In addition to the QC samples, the laboratories also ensure that all analysts receive certification as to their competence in carrying out the analysis and participate in national and international proficiency studies.

SGS and Envirolab are accredited by NATA and operate a Quality System designed to comply with ISO / IEC 17025.

The soil samples were analysed within the allowable holding times detailed in Schedule B(3) of *The National Environment Protection (Assessment of Site Contamination) Measure NEPM 1999 (April 2013)*. The rinsate samples were analysed within the allowable holding times for water detailed in Standard Methods for the Examination of Water and Wastewater (APHA).

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The test methods adopted by the laboratories are indicated with the laboratory test results certificates. As part of the analytical run for the project, the laboratories included laboratory blanks, duplicate samples, laboratory control samples, matrix spikes, matrix spike duplicates and/or surrogate spikes.

We have checked the QA/QC procedures and results adopted by the laboratories against the appropriate guidelines. The QC sample numbers adopted by SGS and Envirolab are considered adequate for the analyses undertaken.

The methods used by SGS and Envirolab have been validated and endorsed by NATA.

All reported laboratory Limits of Reporting (LOR) / Practical Quantitation Limit (PQL) were less than the assessment criteria adopted for each analyte.

Overall, the QC elements adopted by SGS and Envirolab indicate that the analytical data falls within acceptable levels of accuracy and precision for the analysis of soils. The analytical data provided is therefore considered to be reliable and useable for this assessment.

11.0 QA/QC DATA EVALUATION

The following table provides a list of the data quality indicators (DQI) for the analytical phase of the assessment, and the methods adopted in ensuring that the DQI were met.

DATA QUALITY INDICATOR	METHOD(S) OF ACHIEVEMENT
Data Completeness	Laboratory sample receipt information received confirming receipt of samples intact and appropriate COC. Analysis for all potential contaminants of concern. NATA registered laboratory analytical reports / certificates of analysis provided.
Data Comparability	Use of NATA registered laboratories. Test methods consistent for each sample. Test methods comparable between primary and secondary laboratory. Generally, acceptable RPD between original samples and field duplicates / split samples.
Data Representativeness	Representative coverage of potential contaminants in the open area based on site history, site activities, the presence of fill materials. Adequate duplicate, split, trip spike and rinsate sample numbers. Adequate laboratory internal QC and QA methods, complying with the NEPM 1999 (April 2013).
Data Precision and Accuracy	Generally acceptable concentrations in rinsate blank water samples. Acceptable recoveries of spike concentrations in trip spike sample. Acceptable RPD for duplicate comparison overall. Acceptable RPD for split sample comparison overall. Appropriate and validated laboratory test methods used. Adequate laboratory performance based on results of the blank samples, duplicates, surrogate spike samples, control samples and/or matrix spike samples.

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Based on the above, it is considered that both laboratories complied with the quality assurance and quality control data quality indicators. As such, it is concluded that the laboratory test data obtained are reliable and useable for this assessment.

12.0 ASSESSMENT CRITERIA

The criteria developed in the NEPM (1999, April 2013) were used in this assessment, as follows:

- Risk-based Health Investigation Levels (HIL) for a broad range of metals and organic substances. The HIL are applicable for assessing human health risk via all relevant pathways of exposure. The HIL as listed in Table 1A(1) of Schedule B1 “*Guideline on Investigation Levels for Soil and Groundwater*” are provided for different land uses and applicable to the top 3m of soil for residential use.

The site is proposed for a mixture of residential, retail, commercial, open space and recreational uses. Therefore, with regard to human health, analytical results were assessed against a stringent risk based HIL for *residential with garden/accessible soil* (HIL A).

- Health Screening Levels (HSL) for selected petroleum compounds, fractions and Naphthalene are applicable for assessing human health risk via inhalation and direct contact pathways. The HSL depend on specific soil physicochemical properties, land use scenarios and the characteristics of building structures. The HSL listed in Table 1A(3) of Schedule B1 “*Guideline on Investigation Levels for Soil and Groundwater*” apply to different soil types and depths below surface to >4 m.

For this assessment the analytical results were assessed against the available HSL for *residential with garden/accessible soil* (HSL A) for sand (topsoil) and clay (fill) to depth of 0m to <1m.

- Ecological Screening Levels (ESL) for selected petroleum hydrocarbon compounds, TPH fractions and Benzo(a)Pyrene are applicable for assessing the risk to terrestrial ecosystems. ESL listed in Table 1B(6) of Schedule B1 “*Guideline on Investigation Levels for Soil and Groundwater*” broadly apply to coarse and fine-grained soils and various land uses and are generally applicable to the top 2m of soil.

The analytical results were assessed against the available ESL for *residential with garden/accessible soil* for coarse-grained soil (sand) and fine-grained soil (clay).

- Ecological Investigation Levels (EIL), a specific type of Soil Quality Guidelines (SQG) for selected metals and DDT, are applicable for assessing the risk to terrestrial ecosystems. EIL listed in Table 1B(1-5) of Schedule B1 “*Guideline on Investigation Levels for Soil and Groundwater*” depend on specific soil physicochemical properties and land use scenarios and generally apply to the top 2m of soil. For arsenic, lead and DDT, generic EIL are adopted, for *public open space* land use for aged contaminants. For other metals, where available, EIL are calculated using the EIL calculator developed by CSIRO for NEPC.

For this assessment, the analytical results were assessed against the available SQG / EIL for *public open space* land use.

- Due to a lack of EIL for cadmium and mercury, the available Provisional Phytotoxicity Based Investigation Levels (PIL) published in the *Guidelines for the NSW Site Auditor Scheme* (NSW EPA, 2006) were used, with regard to protection of the environment and impact on plant growth.

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In order to detect any potential "hot spots" of contamination within an individual composite soil sample, an adjusted HIL / EIL is recommended for assessment of results for individual composite samples, based on Method 1, Section 6 of the EPA "*Sampling Design Guidelines*" 1995. The Adjusted EIL / HIL C presented in the applicable tables were calculated by dividing the EIL / HIL by three (i.e. three sub-samples comprised the composite). Individual composite samples were assessed against the adjusted EIL / HIL.

Similarly, individual composite soil samples for cadmium and mercury were assessed against the adjusted PIL / HIL.

If the concentration of an analyte for a composite soil sample is in excess of the Adjusted EIL / HIL or adjusted PIL / HIL (for cadmium and mercury only), then all sub-samples of the failed composite samples will be analysed individually. The purpose of this is to detect potentially contaminated sub-samples within the failed composite sample.

For discrete soil samples, the individual concentration of analyte was assessed against the HIL / EIL. The individual concentrations of cadmium and mercury were assessed against the PIL and HIL.

For asbestos, the assessed soil must not contain bonded ACM in excess of 0.01%w/w and surface soil within the site is free of visible ACM, and friable asbestos in the soil is <0.001% w/w.

Detailed assessment will be recommended should the concentrations of analytes exceed the HIL, EIL and/or PIL, in order to confirm the suitability of the site for the proposed use.

13.0 FIELD & LABORATORY TEST RESULTS, ASSESSMENT & DISCUSSION

13.1 Field Results

Details of the sub-surface conditions encountered during field work for this assessment are presented in Appendix D of this report.

13.2 Analytical Results

The actual laboratory test result certificates from SGS are kept in the offices of Geotechnique and can be provided upon request. The test results are summarised in Tables E1 to E4, F, G1 to G8, H1 to H4, I1 to I3, J1 to J3, K1 to K3, L1 to L2 and M1 to M3, along with the assessment criteria adopted. A discussion of the test data is presented in the following sub-sections.

13.2.1 Metals

Discrete samples

Test results of discrete soil samples, together with Cation Exchange Capacity (CEC) and pH in Tables E1 to E4. The CEC and pH values were adopted to calculate EIL in Table E1 to E4.

As shown in Table E1 to E4, all concentrations of Metals, with exception of the highlighted concentrations in Table E3, were below the available relevant EIL or PIL and HIL for residential development with garden/accessible soil (HIL A). Concentrations of cadmium (Cd) and mercury (Hg) were also below the PIL.

The highlighted copper concentrations of 240mg/kg (TP195 0-0.15m), 200mg/kg (TP195 0.5-0.8m) exceeded the adopted EIL, but were below the HIL A.

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The highlighted zinc concentrations of 3300mg/kg (TP168 1.0m-1.2m) and 360mg/kg (TP195 0-0.15m), exceeded the adopted EIL (350mg/kg), but were below the HIL A (7400 mg/kg).

Composite Samples

The results of CEC and pH for the subsamples of the composited samples are presented in table F and the results of metals for composite samples are presented in Tables G1 to G8, where the CEC and pH values in Table F were utilised to calculate the relevant EIL for metals in G1 to G8.

As indicated in Table G1 to G8, all concentrations of metals were below the Adjusted EIL and Adjusted HIL A with the exception of the elevated concentration of Cr (in samples C15, C22, C25, C40, C43, C44, C57, C60), Cu (in samples, C57, C60), Pb (in samples C52, C57) and Zn (in samples, C51, C57). Concentrations of Cd and Hg were also below the Adjusted PIL.

The sub-samples of the failed composite samples were analysed of Cr, Cu, Pb and Zn, and the results are presented in Table H1 to H4.

The concentrations of Cr for subsamples (Table H1) were below the HIL A and EIL.

The concentrations of Cu for subsamples (Table H2) analysed were below the HIL A and EIL, with the exception of the highlighted concentrations in TP163 and TP195. The highlighted concentration of 270mg/kg (TP195 0-0.15m) and 640mg/kg (TP163 1.0m -1.3m) exceeded the adopted EIL, but were below the HIL A.

The concentrations of Pb for subsamples (Table H3) analysed were below the HIL A and EIL, with the exception of the highlighted concentrations of Pb (TP163 1.0m-1.3m). The highlighted concentration of 410mg/kg exceeded the HIL A, but was below the EIL adopted.

The concentrations of Zn for subsamples (Table H4) analysed were below the HIL A and EIL, with the exception of the highlighted concentrations (TP163 1.0m-1.3m). The highlighted concentration of 1500mg/kg exceeded the EIL, but was below the HIL A adopted.

13.2.2 Total Petroleum Hydrocarbons (TPH) and BTEX

The TPH and BTEX test results for discrete samples are presented in Tables I1 to I3 and as indicated, the concentrations of TPH and BTEX were well below the HSL and ESL.

13.2.3 Polycyclic Aromatic Hydrocarbons (PAH)

The PAH test results for discrete samples are presented in Tables J1 to J3 and as shown, concentrations of Benzo(a)pyrene (TEQ), Total PAH, Naphthalene and Benzo(a)pyrene, were well below the HIL, HSL, EIL and ESL, with exception of highlighted concentration of BaP.

The highlighted concentration of BaP (TP156 0-0.15m) exceeded the EIL adopted, which might impact on the environment (terrestrial ecosystem), but would not pose a risk harm to human health.

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13.2.4 Organochlorine Pesticides (OCP) and Polychlorinated Biphenyls (PCB)

Discrete samples

Test results of discrete soil samples for OCP are presented in Tables K1 to K3, and as indicated, the concentrations of OCP and PCB were well below the relevant HIL A, and also less than the laboratory LOR, with the exception of highlighted concentration of PCB (SP2-2 0.5-0.8m). The concentrations of DDT were also below the EIL.

The highlighted concentration of PCB in SP2-2 (14mg/kg) exceeded the adopted HIL A (1 mg/kg)

Composite Samples

The OCP test results for composited soil samples are presented in Table L1 and L2 and as indicated, the concentrations of OCP were well below the relevant Adjusted HIL A, and also less than the LOR. The concentrations of DDT were also below the Adjusted EIL.

13.2.5 Asbestos

The asbestos test results for the samples analysed are presented in Table M1 to M3 and as indicated, no asbestos was found in the majority of soil samples analysed at laboratory reporting level of 0.001%, with the exception of the presence of asbestos in soil and materials at the following locations:

Soil:

TP67 (0.0-0.15m and 0.5-0.8m):	Friable Chrysotile Asbestos
SP2-1 (0-0.15m and 1.5m-1.6m):	Friable Chrysotile Asbestos
SP2-2 (0.5m-0.8m and 1.5m-1.6m):	Friable and Bonded Chrysotile Asbestos
TP195 (0.0-0.15m and 0.5-0.8m):	Friable Chrysotile &/or Crocidolite Asbestos
TP183 (0-0.15 and 1.0m-1.2m):	Friable Chrysotile Asbestos
TP232 (0-0.15m):	Friable Chrysotile Asbestos

Fibrocement piece:

TP141 (0-0.15m and 0.2m-0.6m):	Bonded Amosite & Chrysotile Asbestos
TP154 (0.5m-0.8m):	Bonded Amosite & Chrysotile Asbestos

14.0 CONCLUSION AND RECOMMENDATIONS

The findings of this PCA are summarised as follows:

- The site is underlain by topsoil and/or fill, and also contained soil stockpiles and the various site features as indicated on the Drawing No 13552/1-AA1 and 13552/1-AB1).

Topsoil (thickness ranging 0.2m to 0.5m), comprising clayey silt, silty clay, low to medium plasticity, brown, trace root fibres was encountered in the majority of the test pit excavated.

Fill (150mm to 2600mm thick) silty clay low to high plasticity, brown, grey-brown/dark brown, red-orange, red-brown with/without inclusions demolition waste were encountered in TP41, TP42, TP43, TP49, TP66, TP53, TP67, TP74, TP81, TP82, TP93, TP95, TP137, TP140, TP141, TP147, TP151, TP153, TP152, TP154, TP155, TP156, TP157, TP158, TP159, TP160, TP161, TP162, TP163, TP165, TP166, TP167, TP168, TP171, TP172, TP173, TP174, TP181, TP182, TP183, TP184, TP195, TP205, TP207, TP209, TP211 and TP232; underlain by fill and/or natural soil.

Stockpiles observed within the site comprised silty clay, low to medium plasticity, brown; demolition waste (which included concrete gravel, brick and brick fragments, metal and plastics) with silty sandy soil; silty sand and silty clay combined with gravel, concrete and bitumen and silty clay, low to medium plasticity, brown.

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- As presented in the summary tables (Tables F to M) and discussed in Section 13.2, the laboratory test results satisfied the criteria for stating that the analytes selected are either not present i.e. concentrations less than laboratory LOR, or present in the sampled soil at concentrations that do not pose a risk of harm to human health or the environment under a “residential with access to soil” form of development with exception of following;
 - The elevated copper concentrations of 270mg/kg (TP195 0-0.15m), 200mg/kg (TP195 0.5m-0.8m), and 640mg/kg (TP163 1.0m-1.3m), exceeding the adopted EIL but below the HIL A, would pose a risk of harm to the environment (terrestrial ecosystems), but would not pose a risk harm to human health.
 - The elevated lead concentration, 410mg/kg (TP163 1.0m-1.3m), exceeding the HIL A but below the EIL adopted, would pose a risk of harm to human health but would not pose a risk of harm to the environment (terrestrial ecosystems).
 - The elevated zinc concentrations of 1500mg/kg (TP163 1.0m-1.3m), 3300mg/kg (TP168 1.0m-1.2m) and 360mg/kg (TP195 0-0.15m) exceeding the adopted EIL, would pose a risk of harm to the environment (terrestrial ecosystems), but would not pose a risk harm to human health.
 - The elevated concentration of Benzo(a)pyrene, 0.8mg/kg (TP156 0-0.15m) exceeding the EIL, would pose a risk harm to the environment (terrestrial ecosystem), but would not pose a risk of harm to human health.
 - The highlighted concentration of PCB (14mg/kg) in SP2-2, exceeded the adopted HIL A (1 mg/kg).
- The presence of asbestos in soil and material, exceeding NEPM criteria at the following locations, would present a risk of harm to human health:
 - TP67 (0.0-0.15m and 0.5-0.8m): Friable Chrysotile Asbestos
 - SP2-1 (0-0.15m and 1.5m-1.6m): Friable Chrysotile Asbestos
 - SP2-2 (0.5m-0.8m and 1.5m-1.6m): Friable and Bonded Chrysotile Asbestos
 - TP141 (0-0.15m and 0.2m-0.6m): Bonded Amosite & Chrysotile Asbestos
 - TP154 (0.5m-0.8m): Bonded Amosite & Chrysotile Asbestos
 - TP195 (0.0-0.15m and 0.5-0.8m): Friable Chrysotile &/or Crocidolite Asbestos
 - TP183 (0-0.15 and 1.0m-1.2m): Friable Chrysotile Asbestos
 - TP232 (0-0.15m): Friable Chrysotile Asbestos

The locations of concern mentioned above are shown on Drawing No 13552/1-AC1.

Based on this assessment, the site is considered suitable for the proposed development subject to the following:

- Additional assessment (by sampling and testing) beneath existing site features after their removal, including the underground storage tank. Prior to demolition, a hazardous materials survey of the residential dwellings and sheds should be carried out to determine the presence of the asbestos and/or lead paint, followed by any required remediation. A WorkCover-licensed Asbestos Assessor must be engaged to assess and issue an asbestos clearance certificate.
- Detailed assessment (sampling and testing) in the vicinity of TP163, TP168 and TP195 to determine the extent of copper, zinc and/or lead contamination.

*13552/1-AA**Lot 2 in DP260476 – Richmond Road, Marsden Park*

- Detailed assessment (sampling and testing) in the vicinity of TP156 to determine the extent of BaP contamination.
- Detailed assessment (sampling and testing) of the entirety of Stockpile 2 for potential contamination, as only two sampling locations was carried out within the stockpile. Additional sampling and testing must be carried out to delineate the extent of asbestos and PCB contamination at location SP2-2.
- Detailed assessment (sampling and testing) in the vicinity of TP67, TP141, TP154, TP63, TP167, TP168 to determine the extent of friable and/ or non-friable asbestos. A WorkCover-licensed Asbestos Assessor must be engaged to assess and issue an asbestos clearance certificate.
- Assessment of dam water/water bodies within the site was beyond the scope of this assessment. If the existing dams/water bodies are to be breached, an assessment of water, dam wall and sediment should be carried out to determine the contamination status.
- Development of a remedial action plan (RAP) to remediate the areas with asbestos, metal, BaP, PCB contaminated soil or asbestos containing material (ACM), plus any other contamination identified through the recommended additional sampling and testing, followed by appropriate validation

If any suspect materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos sheets/pieces/pipes, ash material, etc.) are encountered during any stage of future earthworks/site preparation/demolition/remediation or masked by grass/trees, an Unexpected Finds Management Protocol (Appendix E) should be implemented. In the event of contamination, detailed assessment, remediation and validation will be necessary.

Any imported fill must be assessed by a qualified environmental consultant, prior to importation, to ensure suitability for the proposed use. In addition, the imported fill must be free from asbestos, ash and odour, not be discoloured and not acid sulphate soil. The imported fill should either be virgin excavated natural material (VENM) or excavated natural material (ENM).

15.0 LIMITATIONS

To the best of our knowledge, all information obtained and contained in this report is true and accurate. No further investigation has been carried out to authenticate the information provided. Supporting documentation was obtained where possible, some of which is contained in this report.

This report has been prepared for St Smith Developments through J Wyndham Prince Pty Ltd for the purpose stated within, based on the agreed scope of work. Blacktown City Council may rely on the report in making development application determination. Any reliance on this report by other parties shall be at such parties' sole risk, as the report might not contain sufficient information for other purposes.

The information in this report is considered accurate at the completion of field sampling on 30 March 2016. Any variations to the site form or use beyond that date will nullify the conclusion stated.

Whilst the assessment conducted at the site was carried out in accordance with current NSW guidelines, the potential always exists for contaminated soils to be present between sampled locations and unexpected area.

Presented in Appendix F is a document entitled "Environmental Notes", which should be read in conjunction with this report.

LIST OF REFERENCES

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NSW DEC 2006, *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme (2nd Edition)*, NSW Department of Environment and Climate Change, Sydney, Australia.

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DRAWINGS

DRAWINGS

<i>Drawing No 13552/1-AA1</i>	<i>Site Features (Central Boulevard Stage 1 Development)</i>
<i>Drawing No 13552/1-AA2</i>	<i>Test Pit Locations (Central Boulevard Stage 1 Development)</i>
<i>Drawing No 13552/1-AB1</i>	<i>Site Features (excluding Central Boulevard Stage 1 Development)</i>
<i>Drawing No 13552/1-AB2</i>	<i>Test Pit Locations (excluding Central Boulevard Stage 1 Development)</i>
<i>Drawing No 13552/1-AC1</i>	<i>Locations of Concern</i>



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0 60 120 180 240 300m

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NOTES

1. Site features are indicative and are not to scale.
2. This drawing has been produced using a base plan provided by others to which additional information e.g test pits, borehole locations or notes have been added. Some or all of the plan may not be relevant at the time of producing this drawing

J Wyndham Prince Pty Ltd
Proposed Clydesdale Park Estate
Lot 2 in DP260476
Richmond Road, Marsden Park

Site Features

Drawing No: 13552/1-AA1
Job No: 13552/1
Drawn By: MH
Date: 12 April 2016
Checked By: SS/DS

File No: 13552-1
Layers: 0, AA1



LEGEND

■ Test Pit

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0 60 120 180 240 300m
Scale 1:6000

STOCKPILE 1 DETAIL

0 5 10 15 20 25m
Scale 1:500

STOCKPILE 3 DETAIL

0 5 10 15 20 25m
Scale 1:500



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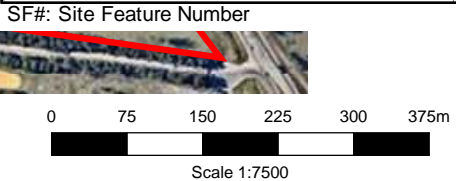
Test Pit Locations

Drawing No: 13552/1-AA2
Job No: 13552/1
Drawn By: MH
Date: 8 April 2016
Checked By: DS

File No: 13552-1
Layers: 0, AA2



SF#	Description
1	Flat, open paddocks
2	Fill area
3	Open metal shed
4	Fill/stockpile area
5	Shipping container
6	Wooden pieces, tyres, and scrap metal
7	Fibro-cement, weatherboard and timber house, with metal roof
8	Metal shed
9	Possible fill area
10	Bridge crossing
11	Truck trailers
12	Fibro-cement house with tile roof
13	Weatherboard and fibro-cement house, with metal roof
14	Brick building with metal roof
15	Weatherboard house with metal roof
16	Weatherboard and brick house, with metal roof
17	Fibro-cement and metal house, with tile roof
18	Scattered metals and concrete on paddock
19	Rubber tubing and scrap metal
20	Trench
21	Concrete pipe
22	Building structure with tile roof
23	Damaged car
24	Bitumen observed on ground
25	Scrap metal and wooden pallets
26	Plastic containers
27	Metal trusses, corrugated sheets, wooden pallets, containers, scrap metals and timber
28	Wooden pallets and scrap metal
29	Dairy carousel
30	Fill area with concrete slab and underground tank
31	Corrugated metal shed
32	Concrete trough
33	Deep trench
34	Unsealed driveway
35	Concrete storage area
36	Earth mound
37	Dam with water
38	Metal trough
39	Graveyard
40	Metal Structure
41	Trench with water
42	Tyres
43	Stockpile 2
44	Stockpile 7
45	Stockpile 8
46	Stockpile 9
47	Stockpile 10



LEGEND
Site Feature Number

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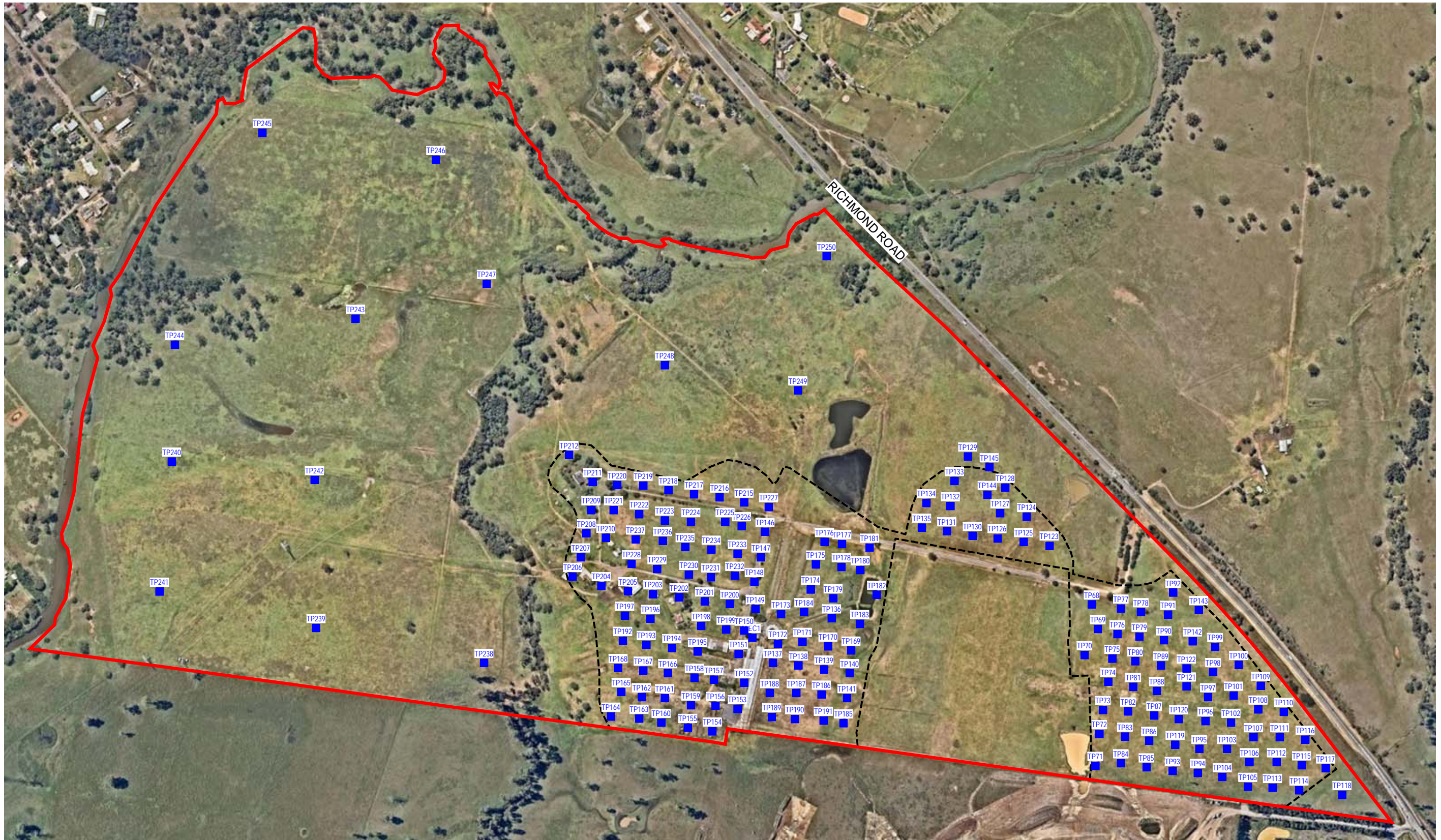
- NOTES**
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 - Site features are shown at approximate locations and are not to scale.

J Wyndham Prince Pty Ltd
Proposed Clydesdale Park Estate
Lot 2 in DP260476
Richmond Road, Marsden Park

Site Features

Drawing No: 13552/1-AB1
Job No: 13552/1
Drawn By: MH
Date: 13 April 2016
Checked By: SS/DS

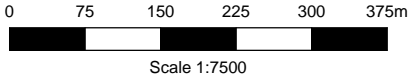
File No: 13552-1 (A3L)
Layers: 0, AB1



LEGEND

■ Test Pit

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J Wyndham Prince Pty Ltd
Proposed Clydesdale Park Estate
Lot 2 in DP260476
Richmond Road, Marsden Park

Test Pit Locations

Drawing No: 13552/1-AB2
Job No: 13552/1
Drawn By: MH
Date: 12 April 2016
Checked By: SS/DS

File No: 13552-1 (A3L)
Layers: 0, AB2



LEGEND

■ Test Pit

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J Wyndham Prince Pty Ltd
Proposed Clydesdale Park Estate
Lot 2 in DP260476
Richmond Road, Marsden Park

Locations of Concern

Drawing No: 13552/1-AC1
Job No: 13552/1
Drawn By: MH
Date: 2 May 2016
Checked By: DS

File No: 13552-1
Layers: 0, AC1

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TABLE A1
RINSATE SAMPLES
(Ref No: 13552/1-AA)

ANALYTES	Rinsate R1 7/03/2016	Rinsate R2 9/03/2016	Rinsate R3 10/03/2016
METALS	(mg/L)	(mg/L)	(mg/L)
Arsenic	<0.02	<0.02	<0.02
Cadmium	<0.001	<0.001	<0.001
Chromium	<0.005	<0.005	<0.005
Copper	<0.005	<0.005	<0.005
Lead	<0.02	<0.02	<0.02
Mercury	<0.0001	<0.0001	<0.0001
Nickel	<0.005	<0.005	<0.005
Zinc	<0.01	<0.01	<0.01
TOTAL PETROLEUM HYDROCARBONS (TPH)		(µg/L)	
F1 (C6-C10 less BTEX)	-	<50	-
F2 (>C10-C16)	-	<60	-
F3 (>C16-C34)	-	<500	-
F4 (>C34-C40)	-	<500	-
BTEX		(µg/L)	
Benzene	-	<0.5	-
Toluene	-	<0.5	-
Ethyl Benzene	-	<0.5	-
Xylenes	-	<1.5	-
POLYCYCLIC AROMATIC HYDROCARBONS (PAH)		(µg/L)	
Total PAH	-	<1	-
Naphthalene	-	<0.1	-
Benzo(a)Pyrene	-	<0.1	-
ORGANOCHLORINE PESTICIDES (OCP)	(µg/L)	(µg/L)	(µg/L)
Hexachlorobenzene (HCB)	<0.1	<0.1	<0.1
Heptachlor	<0.1	<0.1	<0.1
Aldrin+Dieldrin	<0.2	<0.2	<0.2
Endrin	<0.1	<0.1	<0.1
Methoxychlor	<0.1	<0.1	<0.1
Mirex	<0.1	<0.1	<0.1
Endosulfan (Alpha, Beta & Sulphate)	<0.3	<0.3	<0.3
DDD+DDE+DDT	<0.6	<0.6	<0.6
Chlordane (alpha & gamma)	<0.2	<0.2	<0.2
POLYCHLORINATED BIPHENYLS (PCB)		(µg/L)	
Arochlor 1016	-	<1	-
Arochlor 1221	-	<1	-
Arochlor 1232	-	<1	-
Arochlor 1242	-	<1	-
Arochlor 1248	-	<1	-
Arochlor 1254	-	<1	-
Arochlor 1260	-	<1	-
Arochlor 1262	-	<1	-
Arochlor 1268	-	<1	-

TABLE A2
RINSATE SAMPLES
(Ref No: 13552/1-AA)

ANALYTES	Rinsate R4 11/03/2016	Rinsate R5 15/03/2016	Rinsate R6 17/03/2016	Rinsate R7 18/03/2016	Rinsate R8 22/03/2016
METALS	(mg/L)	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic	<0.02	<0.02	<0.02	<0.02	0.02
Cadmium	<0.001	<0.001	<0.001	<0.001	0.001
Chromium	<0.005	<0.005	<0.005	<0.005	<0.005
Copper	<0.005	<0.005	<0.005	<0.005	<0.005
Lead	<0.02	<0.02	<0.02	<0.02	<0.02
Mercury	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	<0.005	<0.005	<0.005	<0.005	<0.005
Zinc	<0.01	<0.01	<0.01	<0.01	<0.01
Organochlorine Pesticides (OCP)	(µg/L)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Hexachlorobenzene (HCB)	<0.1	<0.1	<0.1	-	<0.1
Heptachlor	<0.1	<0.1	<0.1	-	<0.1
Aldrin+Dieldrin	<0.2	<0.2	<0.2	-	<0.2
Endrin	<0.1	<0.1	<0.1	-	<0.1
Methoxychlor	<0.1	<0.1	<0.1	-	<0.1
Mirex	<0.1	<0.1	<0.1	-	<0.1
Endosulfan (Alpha, Beta & Sulphate)	<0.3	<0.3	<0.3	-	<0.3
DDD+DDE+DDT	<0.6	<0.6	<0.6	-	<0.6
Chlordane (alpha & gamma)	<0.2	<0.2	<0.2	-	<0.2

TABLE A3
RINSATE SAMPLES
(Ref No: 13552/1-AA)

ANALYTES	Rinsate R9 23/03/2016	Rinsate R10 24/03/2016	Rinsate R11 29/03/2016	Rinsate R12 30/03/2016
METALS	(mg/L)	(mg/L)	(mg/L)	(mg/L)
Arsenic	<0.02	<0.02	<0.02	<0.02
Cadmium	0.001	<0.001	<0.001	<0.001
Chromium	<0.005	<0.005	<0.005	<0.005
Copper	<0.005	<0.005	<0.005	<0.005
Lead	<0.02	<0.02	<0.02	<0.02
Mercury	<0.0001	<0.0001	<0.0001	<0.0001
Nickel	<0.005	<0.005	<0.005	<0.005
Zinc	<0.01	<0.01	<0.01	<0.01
Organochlorine Pesticides (OCP)	(µg/L)	(µg/L)	(µg/L)	(µg/L)
Hexachlorobenzene (HCB)	<0.1	<0.1	<0.1	<0.1
Heptachlor	<0.1	<0.1	<0.1	<0.1
Aldrin+Dieldrin	<0.2	<0.2	<0.2	<0.2
Endrin	<0.1	<0.1	<0.1	<0.1
Methoxychlor	<0.1	<0.1	<0.1	<0.1
Mirex	<0.1	<0.1	<0.1	<0.1
Endosulfan (Alpha, Beta & Sulphate)	<0.3	<0.3	<0.3	<0.3
DDD+DDE+DDT	<0.6	<0.6	<0.6	<0.6
Chlordane (alpha & gamma)	<0.2	<0.2	<0.2	<0.2

TABLE B1
TRIP SPIKE SAMPLES
(Ref No: 13552/1-AA)

ANALYTES	Trip Spike TS2	Trip Spike TS3	Trip Spike TS4	Trip Spike TS5	Trip Spike TS6
BTEX					
Benzene	86%	87%	92%	113%	97%
Toluene	94%	84%	93%	91%	98%
Ethyl Benzene	74%	84%	94%	81%	98%
Xylenes	75%	80%	90%	79%	99%

Note : results are reported as percentage recovery of known spike concentrations

TABLE B2
TRIP SPIKE SAMPLES
(Ref No: 13552/1-AA)

ANALYTES	Trip Spike TS7	Trip Spike TS8	Trip Spike TS9
BTEX			
Benzene	85%	87%	86%
Toluene	87%	87%	81%
Ethyl Benzene	82%	83%	76%
Xylenes	85%	83%	74%

Note : results are reported as percentage recovery of known spike concentrations

TABLE C1
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	Composite C3 mg/kg	Duplicate D1 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	7	6	15
Cadmium	0.3	<0.3	-
Chromium	18	16	12
Copper	6.9	5.9	16
Lead	21	19	10
Mercury	0.02	0.02	0
Nickel	2.4	2.1	13
Zinc	12	12	0
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.15	<0.15	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C2
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C13 mg/kg	Duplicate D2 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	10	7	35
Cadmium	0.4	0.4	0
Chromium	28	24	15
Copper	8.6	8	7
Lead	24	21	13
Mercury	0.01	<0.01	-
Nickel	3	2.9	3
Zinc	27	22	20
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.15	<0.15	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C3
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C31 0-0.15m mg/kg	Duplicate D3 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	11	9	20
Cadmium	0.7	0.6	15
Chromium	23	18	24
Copper	11	11	0
Lead	22	20	10
Mercury	0.01	0.02	67
Nickel	3.7	3.1	18
Zinc	22	19	15
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.3	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C4
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C39 0-0.15m mg/kg	Duplicate D4 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	6	5	18
Cadmium	0.4	0.3	29
Chromium	16	13	21
Copper	5.7	6.1	7
Lead	19	19	0
Mercury	0.01	0.01	0
Nickel	3.8	3.6	5
Zinc	15	16	6
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.3	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C5
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C64 0-0.15m mg/kg	Duplicate D5 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	4	5	22
Cadmium	<0.3	<0.3	-
Chromium	10	13	26
Copper	4.2	3.7	13
Lead	19	20	5
Mercury	0.01	0.02	67
Nickel	1.4	1.7	19
Zinc	14	13	7
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.3	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C6
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C69 0-0.15m mg/kg	Duplicate D6 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	8	7	13
Cadmium	0.4	0.4	0
Chromium	25	26	4
Copper	4.3	4.3	0
Lead	17	17	0
Mercury	0.01	0.01	0
Nickel	2.7	2.6	4
Zinc	12	12	0
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.3	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE C7
DUPLICATE SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C74 0-0.15m mg/kg	Duplicate D7 mg/kg	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	4	<3	-
Cadmium	<0.3	<0.3	-
Chromium	17	11	43
Copper	5.4	8.1	40
Lead	15	11	31
Mercury	0.02	0.01	67
Nickel	5.4	6.6	20
Zinc	12	16	29
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.3	-
Endrin	<0.2	<0.2	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	<0.1	-
Endosulfan (alpha, beta & sulphate)	<0.5	<0.5	-
DDD+DDE+DDT	<0.6	<0.6	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D1
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C1 mg/kg (SGS)	Split Sample S1 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	6	10	50
Cadmium	0.4	<0.4	-
Chromium	22	29	27
Copper	7.5	7	7
Lead	22	25	13
Mercury	0.01	<0.1	-
Nickel	2.8	4	35
Zinc	18	15	18
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.15	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D2
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C7 mg/kg (SGS)	Split Sample S2 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	5	7	33
Cadmium	0.3	<0.4	-
Chromium	14	19	30
Copper	6.9	6	14
Lead	20	19	5
Mercury	0.01	<0.1	-
Nickel	2.9	3	3
Zinc	12	8	40
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.15	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D3
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C33 0-0.15m mg/kg (SGS)	Split Sample S3 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	10	9	11
Cadmium	0.7	<0.4	-
Chromium	29	30	3
Copper	10	9	11
Lead	22	16	32
Mercury	0.02	<0.1	-
Nickel	3.4	3	13
Zinc	20	12	50
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D4
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C37 0-0.15m mg/kg (SGS)	Split Sample S4 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	8	7	13
Cadmium	0.7	<0.4	-
Chromium	19	17	11
Copper	12	11	9
Lead	21	12	55
Mercury	0.01	<0.1	-
Nickel	3.7	3	21
Zinc	20	12	50
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D5
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C67 0-0.15m mg/kg (SGS)	Split Sample S5 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	6	7	15
Cadmium	0.4	<0.4	-
Chromium	21	24	13
Copper	6	6	0
Lead	21	17	21
Mercury	0.01	<0.1	-
Nickel	2.8	3	7
Zinc	15	11	31
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D6
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C73 0-0.15m mg/kg (SGS)	Split Sample S6 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	<3	5	-
Cadmium	<0.3	<0.4	-
Chromium	7.8	21	92
Copper	8.3	6	32
Lead	11	21	63
Mercury	0.01	<0.1	-
Nickel	6.6	7	6
Zinc	17	12	34
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE D7
SPLIT SAMPLE
(Ref No: 13552/1-AA)

ANALYTES	C74 0-0.15m mg/kg (SGS)	Split Sample S7 mg/kg (ENVIROLAB)	RELATIVE PERCENTAGE DIFFERENCES (RPD) %
METALS			
Arsenic	4	5	22
Cadmium	<0.3	<0.4	-
Chromium	17	17	0
Copper	5.4	10	60
Lead	15	19	24
Mercury	0.02	<0.1	-
Nickel	5.4	5	8
Zinc	12	39	106
ORGANOCHLORINE PESTICIDES (OCP)			
Hexachlorobenzene (HCB)	<0.1	<0.1	-
Heptachlor	<0.1	<0.1	-
Aldrin+Dieldrin	<0.3	<0.2	-
Endrin	<0.2	<0.1	-
Methoxychlor	<0.1	<0.1	-
Mirex	<0.1	-	-
Endosulfan (alpha (I), beta (II) & sulphate)	<0.5	<0.3	-
DDD+DDE+DDT	<0.6	<0.3	-
Chlordane (alpha & gamma)	<0.2	<0.2	-

TABLE E1
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

		METALS (mg/kg)								CEC (cmol _e /kg)	pH
		ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
Sample Location	Depth (m)										
TP25	0-0.15	<3	<0.3	8.3	6.3	13	0.02	2.3	10	11	6.9
TP41	0.0-0.15	4	<0.3	12	19	45	0.03	7.5	55	12	7.7
TP41	0.5-10.8	8	<0.3	14	19	27	0.03	7.3	67	-	-
TP42	0.0-0.15	6	<0.3	14	29	21	<0.01	8.8	66	17	7.5
TP42	1.0-1.3	7	0.4	18	40	30	0.02	11	98	-	-
TP43	0.0-0.15	6	0.4	13	23	40	0.04	12	67	-	-
TP43	0.5-0.7	3	0.6	13	20	25	0.07	7.6	45	-	-
TP53	0.0-0.15	7	0.4	21	18	37	0.04	8.7	47	15	7.8
TP66	0.0-0.15	4	0.3	13	24	33	0.02	5.0	43	13	5.7
TP67	0.0-0.15	6	0.5	25	30	27	0.03	8.3	63	-	-
Limits of Reporting (LOR)		3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
Health-based Investigation Levels (HIL) ^a - Residential A		100	20	100 ^c	6000	300	10 ^d	400	7400		
Ecological Investigation Levels (EIL) - ^b Urban residential		100 ^e	-	400 ^f	170	1100 ^g	-	180	390		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)											
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1					

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.
b: EIL of aged chromium(III), nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=11 cmolc/kg & pH=5.7; the assumed clay content=10 % were selected for derivation of EIL; a conservative approach.
EIL of aged copper adopted as the lowest of the values for pH and CEC.

c: Chromium (VI)

d: Methyl Mercury

e: Generic EIL for aged arsenic

f: Chromium (III)

g: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low traffic volume.

TABLE E2
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

		METALS (mg/kg)								CEC (cmol _e /kg)	pH
		ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
Sample Location	Depth (m)										
SP1-2	0.5-0.8	9	0.4	27	14	23	0.01	5.0	53	14	6.6
SP2-1	0-0.15	4	0.4	14	33	54	0.25	9.0	150	43	7.8
SP2-1	0.5-0.8	4	0.3	13	30	52	0.23	13	180	-	-
SP2-1	1.0-1.3	4	0.3	13	28	49	0.26	12	170	66	8.2
SP2-1	1.5-1.6	5	<0.3	13	28	45	0.22	9.6	220	-	-
SP2-2	0-0.15	<3	<0.3	11	21	69	0.13	15	120	-	-
SP2-2	0.5-0.8	4	<0.3	11	14	36	0.06	6.3	96	-	-
SP2-2	1.0-1.3	3	0.4	13	48	100	0.07	15	450	-	-
SP2-2	1.5-1.8	4	0.4	13	43	87	0.06	8.7	440	51	8.5
SP3-1	0-0.15	4	<0.3	12	8	17	0.02	5.4	38	-	-
SP3-1	0.5-0.7	<3	<0.3	11	7.6	14	0.03	7.3	29	-	-
SP3-2	0-0.15	<3	<0.3	8	5.4	13	0.02	5.9	22	-	-
SP3-2	0.5-0.8	<3	<0.3	8.6	5.5	13	0.03	6.1	18	-	-
SP3-3	0-0.15	3	0.4	8.2	10	16	0.07	6.8	32	25	8.7
SP3-3	0.5-0.8	<3	<0.3	7.2	5.4	9	0.02	4.8	17	-	-
Limits of Reporting (LOR)		3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
Health-based Investigation Levels (HIL) A ^a - Residential A		100 ^e	20	100 ^c	6000	300 ^g	10 ^d	400	7400		
Ecological Investigation Levels (EIL) - Urban residential		100	-	400 ^f	220	1100	-	210	600		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)											
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1					

- Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.
- b: EIL of aged chromium(III), nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=14 cmol_e/kg & pH=6.6; the assumed clay content=10 % were selected for derivation of EIL; a conservative approach.
- EIL of aged copper adopted as the lowest of the values for pH and CEC.
- c: Chromium (VI)
- d: Methyl Mercury
- e: Generic EIL for aged arsenic
- f: Chromium (III)
- g: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low traffic volume.

TABLE E3
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location Depth (m)		METALS (mg/kg)								CEC (cmol/kg)	pH
		ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
TP74	0.0-0.15	5	0.4	11	16	54	0.04	7.4	29	15	6.3
TP74	0.5-0.6	5	0.4	9.5	28	69	0.12	12	51	-	-
TP81	0.0-0.15	10	0.6	19	13	20	<0.01	4.1	17	15	6.8
TP82	0.0-0.15	8	0.5	20	13	19	0.02	3.1	22	20	6.9
TP83	0.0-0.15	8	0.6	21	14	21	0.02	3.9	22	-	-
TP93	0.0-0.15	7	0.5	14	10	16	<0.01	3.3	15	11	6.3
TP95	0.0-0.15	10	0.8	25	30	22	0.01	4.2	76	14	7.6
TP95	0.5-0.8	4	<0.3	9.3	10	7	<0.01	1.4	8.6	-	-
TP174	0.0-0.15	5	0.4	16	9.8	16	<0.01	3.6	25	12	6.2
TP147	0-0.15	3	0.6	5.7	41	21	0.02	31	120	10	8.1
TP154	1.0-1.3	5	0.4	9.7	67	81	0.11	9.0	160	-	-
TP155	0-0.15	6	0.4	15	25	23	0.02	7.1	56	15	7.6
TP155	1.5-1.8	4	<0.3	17	19	94	0.07	10	71	-	-
TP156	0-0.15	8	0.5	17	32	86	0.09	18	140	29	8.1
TP175	0-0.15	4	0.4	14	17	20	0.02	3.8	66	-	-
TP177	0-0.15	8	0.5	26	14	25	0.01	6.4	48	-	-
TP181	0.45-0.55	5	0.3	16	7.3	18	0.01	3.0	14	-	-
TP183	1.0-1.2	6	0.4	21	28	27	0.01	4.9	47	19	8.0
TP160	1.5-1.8	4	0.3	13	40	44	0.03	15	150	33	8.1
TP163	0-0.15	5	0.3	16	27	27	0.04	11	150	24	7.6
TP164	0-0.15	5	<0.3	14	7.5	11	0.02	2.0	6.8	-	-
TP165	0.5-0.7	7	<0.3	14	13	14	<0.01	2.0	16	12	7.3
TP166	0-0.15	6	<0.3	14	19	42	0.01	10	52	-	-
TP166	1.0-1.3	6	<0.3	13	9.7	13	<0.01	2.0	21	15	5.5
TP167	1.0-1.3	8	0.5	20	11	23	<0.01	1.7	13	13	4.7
TP167	1.5-1.8	<3	<0.3	6	6.4	10	<0.01	1.8	19	-	-
TP167	2.0-2.3	8	0.3	17	9	18	<0.01	1.2	9.6	-	-
TP168	1.0-1.2	17	0.9	30	88	33	0.09	12	3300	-	-
TP195	0-0.15	4	0.4	47	240	53	0.05	39	360	-	-
TP195	0.5-0.8	4	0.4	67	200	43	0.05	67	270	-	-
TP199	0.15-0.25	7	<0.3	21	8.2	15	<0.01	1.8	9.5	-	-
TP232	0.5-0.8	4	0.4	15	9.8	48	0.01	2.9	38	16	8.4
TP209	0.0-0.15	3	<0.3	9.5	5.6	10	0.08	1.8	16	18	8.6
Limits of Reporting (LOR)		3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
Health-based Investigation Levels (HIL) A ^a - Residential A		100	20	100 ^c	6000	300	10 ^d	400	7400		
Ecological Investigation Levels (EIL) - Urban residential		100 ^e	-	400 ^f	150	1100 ^g	-	170	350		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)											
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1					

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: EIL of aged chromium(III), nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=1 cmolc/kg & pH=2.5; the assumed clay content=10 % were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

c: Chromium (VI)

d: Methyl Mercury

e: Generic EIL for aged arsenic

f: Chromium (III)

g: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low traffic volume.

TABLE E4
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
DISCRETE SAMPLE
(Ref No: 13552/1-AA)

		METALS (mg/kg)								CEC (cmol _e /kg)	pH
		ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
Sample Location	Depth (m)										
TP139	0-0.15	18	1.6	39	23	31	0.01	2.4	30	5.2	5.0
Limits of Reporting (LOR)		3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
Health-based Investigation Levels (HIL) A ^a - Residential A		100	20	100 ^c	6000	300	10 ^d	400	7400		
Ecological Investigation Levels (EIL) - Urban residential		100 ^e	-	400 ^f	100	1100 ^g	-	40	210		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)											
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1					

- Notes:
- a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.
 - b: EIL of aged chromium(III), nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=5.2 cmol/kg & pH=5; the assumed clay content=10 % were selected for derivation of EIL; a conservative approach.
 - EIL of aged copper adopted as the lowest of the values for pH and CEC.
 - c: Chromium (VI)
 - d: Methyl Mercury
 - e: Generic EIL for aged arsenic
 - f: Chromium (III)
 - g: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low traffic volume.

TABLE F

CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
SUB-SAMPLES
(Ref No: 13552/1-AA)

Composite Number	Sub-sample	Depth (m)	CEC (cmol _c /kg)	pH
C1	TP1	0-0.15	9.8	7.3
C4	TP12	0-0.15	5.9	7.2
C8	TP24	0-0.15	10	5.9
C9	TP26	0.0-0.15	13	6.7
C14	TP44	0.0-0.15	8.5	7.3
C14	TP46	0.0-0.15	9.4	6.7
C17	TP56	0.0-0.15	11	6.5
C22	TP68	0.0-0.15	9.6	6.9
C23	TP71	0.0-0.15	14	6.7
	TP74	0.0-0.15	15	6.3
C28	TP91	0.0-0.15	19	7.2
C29	TP96	0.0-0.15	14	6.8
C30	TP98	0.0-0.15	14	6.9
C31	TP103	0.0-0.15	15	6.8
C36	TP116	0.0-0.15	18	7.4
C37	TP119	0-0.15	14	6.2
C37	TP120	0-0.15	13	6.8
C38	TP123	0-0.15	7.1	7.1
C40	TP130	0-0.15	25	8.0
C41	TP131	0-0.15	14	6.9
C44	TP169	0.0-0.15	5.8	7.7
C45	TP172	0.0-0.15	9.8	6.1
C47	TP184	0.0-0.15	17	7.7
C48	TP136	0-0.15	10	6.8
C48	TP137	0-0.15	17	8.5
	TP137	0.35-0.45	12	4.9
C50	TP148	0-0.15	18	7.4
C51	TP152	0-0.15	10	8.1
C52	TP154	0-0.15	14	7.8
C53	TP157	0-0.15	4.5	6.7
C54	TP182	0.5-0.8	27	8.1
C57	TP160	0-0.15	19	7.5
C68	TP212	0.0-0.15	11	6.8
C72	TP235	0.0-0.15	9.4	7.0
Limits of Reporting (LOR)			0.02	-

TABLE G1
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AA)

Composite Number	METALS (mg/kg)							
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC
C1	6	0.4	22	7.5	22	0.01	2.8	18
C2	5	<0.3	14	5.7	20	0.02	2.9	9.4
C3	7	0.3	18	6.9	21	0.02	2.4	12
C4	7	0.3	17	5.7	24	0.02	2.3	9.2
C5	6	0.3	18	7	18	0.01	3.2	16
C6	3	<0.3	12	6.1	15	0.02	2.9	10
C7	5	0.3	14	6.9	20	0.01	2.9	12
C8	6	0.4	15	9.1	21	0.01	2.9	22
C9	9	0.4	23	12	25	0.02	3.4	20
C10	11	0.5	28	13	24	0.01	3.3	38
C11	9	0.3	28	7.5	21	0.01	2.6	23
C12	10	0.4	28	10	25	0.01	3.2	34
C13	10	0.4	28	8.6	24	0.01	3.0	27
C14	8	0.4	25	11	25	0.01	4.4	30
C15	8	0.3	58	12	24	0.02	3.4	30
C16	4	<0.3	10	5.1	13	0.01	1.9	11
C17	7	<0.3	19	11	20	0.02	3.5	19
C18	8	0.4	22	14	23	0.02	5.2	35
C19	6	<0.3	18	7.3	17	<0.01	3.5	13
C20	6	<0.3	20	11	20	0.02	4.5	17
C21	7	0.3	17	17	20	0.01	5.8	74
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)								
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467
Ecological Investigation Levels (EIL) ^c - Urban residential	100 ^h	-	400 ⁱ	120	1100 ¹	-	55	340
Adjusted EIL ^d	33	-	133	40	367	-	18	113
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)								
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1		
Adjusted PIL ^e		1				0.33		

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=5.9 cmolc/kg and pH=5.9; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low

*: CEC & pH of sub-sample

TABLE G2
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol/kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C22	11	0.8	37	9.4	26	0.02	3.7	27	9.6	6.9
C24	10	0.7	28	12	24	0.01	3.1	39	-	-
C26	7	0.5	18	16	17	0.02	4.2	31	-	-
C27	10	0.8	27	12	20	<0.01	3.7	16	-	-
C28	10	0.7	19	12	22	0.02	7.2	28	19	7.2
C29	11	0.8	25	11	21	0.01	3.7	21	14	6.8
C30	7	0.5	19	7	17	0.02	2	13	14	6.9
C31	11	0.7	23	11	22	0.01	3.7	22	15	6.8
C32	7	0.5	17	12	18	0.01	5.1	16	-	-
C33	10	0.7	29	10	22	0.02	3.4	20	-	-
C34	8	0.8	30	9.1	23	0.02	3.8	16	-	-
C35	7	0.4	16	13	18	0.02	4.4	17	-	-
C36	8	0.5	19	11	21	0.02	3.5	15	18	7.4
C37	8	0.7	19	12	21	0.01	3.7	20	13	6.2
C38	7	0.5	17	7.6	20	0.01	3.1	15	7.1	7.1
C39	6	0.4	16	5.7	19	0.01	3.8	15	-	-
C40	8	0.7	34	6.2	22	<0.01	5.1	21	25	8.0
C41	9	0.6	27	8.2	22	0.02	5.4	23	14	6.9
C42	10	0.6	23	9.8	19	0.01	4.1	22	-	-
C43	12	0.9	36	8.8	25	0.01	6.5	27	-	-
C44	9	0.7	41	9.2	26	0.01	3.4	37	5.8	7.7
C45	5	0.4	14	13	17	<0.01	3.2	19	9.8	6.1
C46	6	0.5	22	15	19	0.01	4.9	42	-	-
C53	4	<0.3	12	23	15	0.03	9.7	55	4.5	6.7
C55	9	0.5	18	13	18	<0.01	2.6	28	-	-
C56	10	0.6	24	11	19	<0.01	2.3	20	-	-
C58	13	0.3	16	19	19	0.03	3	31	-	-
C59	10	0.5	25	9	28	0.03	5.5	36	-	-
C61	10	0.4	27	11	23	0.02	3.1	27	-	-
C64	4	<0.3	10	4.2	19	0.01	1.4	14	-	-
C65	30	0.5	21	8.8	29	0.03	4.1	45	-	-
C66	6	0.4	22	4.2	15	0.01	2.1	14	-	-
C67	6	0.4	21	6	21	0.01	2.8	15	-	-
C68	7	0.5	25	6.7	28	0.01	4.4	29	11	6.8
C69	8	0.4	25	4.3	17	0.01	2.7	12	-	-
C70	7	0.4	20	6.2	16	<0.01	2.7	17	-	-
C71	10	<0.3	18	20	29	0.02	4.3	31	-	-
C72	5	0.3	21	5.8	19	0.01	3.8	13	9.4	7.0
C73	4	<0.3	17	5.4	15	0.02	5.4	12	-	-
C74	<3	<0.3	7.8	8.3	11	0.01	6.6	17	-	-
C75	4	<0.3	14	9.4	16	0.02	4.3	41	-	-
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - Urban residential	100 ^h	-	400 ⁱ	100	1100 ¹	-	30	290		
Adjusted EIL ^d	33	-	133	33	367	-	10	97		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=EIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=4.5 cmol/kg and pH=6.1; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: Generic added contaminant limit for aged lead + ambient background concentration; old NSW suburb with low traffic volume.

*: CEC & pH of sub-sample

TABLE G3
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C23	11	0.8	29	16	25	0.02	6.6	30	14	6.3
C49	11	0.9	28	21	37	0.01	9.9	84	-	-
C60	10	0.6	40	100	46	0.03	23	130	-	-
C63	6	0.6	27	21	61	0.05	19	120	-	-
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - ^c Urban residential	100 ^h	-	400 ⁱ	220	1100 ¹	-	210	590		
Adjusted EIL ^d	33	-	133	73	367	-	70	197		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=14 cmolc/kg and pH=6.3; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE G4
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C25	11	0.8	34	12	25	0.02	4.5	37	-	-
C50	8	0.7	26	18	22	0.01	20	51	18	7.4
C62	7	0.6	33	26	54	0.03	33	170	-	-
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - ^c Urban residential	100 ^h	-	400 ⁱ	220	1100 ¹	-	250	720		
Adjusted EIL ^d	33	-	133	73	367	-	83	240		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=18 cmolc/kg and pH=7.4; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE G5
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C47	8	0.6	23	16	21	0.01	5.4	49	17	7.7
C52	4	0.3	7.8	64	130	0.1	5.1	150	14	7.8
C57	11	0.7	44	470	300	0.06	18	1200	19	7.5
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - ^c Urban residential	100 ^h	-	400 ⁱ	220	1100 ¹	-	210	600		
Adjusted EIL ^d	33	-	133	73	367	-	70	200		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=14 cmolc/kg and pH=7.5; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE G6
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLE
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C48	9	0.7	22	20	22	0.01	18	49	10	5.1
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - Urban residential	100 ^h	-	400 ⁱ	120	1100 ¹	-	170	390		
Adjusted EIL ^d	33	-	133	40	367	-	57	130		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=10 cmol_c/kg and pH=5.1; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE G7
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLE
(Ref No: 13552/1-AB)

Composite Number	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
C51	3	0.4	13	29	14	0.01	21	160	10	8.3
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - Urban residential	100 ^h	-	400 ⁱ	210	1100 ¹	-	170	480		
Adjusted EIL ^d	33	-	133	70	367	-	57	160		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=10 cmol_c/kg and pH=8.3; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE G8
METALS, CATION EXCHANGE CAPACITY (CEC) & pH TEST RESULTS
COMPOSITED SAMPLE
(Ref No: 13552/1-AB)

	METALS (mg/kg)								CEC (cmol _c /kg) *	pH *
	ARSENIC	CADMIUM	CHROMIUM (Total)	COPPER	LEAD	MERCURY	NICKEL	ZINC		
Composite Number										
C54	7	0.7	14	34	70	0.03	4.6	110	27	8.1
Limits of Reporting (LOR)	3	0.3	0.3	0.5	1	0.01	0.5	0.5	0.02	-
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A	100	20	100 ^f	6000	300	10 ^g	400	7400		
Adjusted HIL ^b	33	7	33	2000	100	3	133	2467		
Ecological Investigation Levels (EIL) - ^c Urban residential	100 ^h	-	400 ⁱ	230	1100 ¹	-	330	960		
Adjusted EIL ^d	33	-	133	77	367	-	110	320		
GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (2006)										
Provisional Phytotoxicity-Based Investigation Levels (PIL)		3				1				
Adjusted PIL ^e		1				0.33				

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3

c: EIL of aged chromium(III), copper, nickel & zinc were derived from calculation spreadsheet developed by CSIRO for NEPC; old NSW suburb with low traffic volume; the lowest CEC=27 cmolc/kg and pH=8.1; the assumed clay content=10 % of the sub-sample were selected for derivation of EIL; a conservative approach.

EIL of aged copper adopted as the lowest of the values for pH and CEC.

d: Adjusted EIL=EIL/3

e: Adjusted PIL=PIL/3

f: Chromium (VI)

g: Methyl Mercury

h: Generic EIL for aged arsenic

i: Chromium (III)

j: #REF!

*: CEC & pH of sub-sample

TABLE H1
CHROMIUM TEST RESULTS
SUB-SAMPLES
(Ref No: 13552/1-AA)

Composite Number	Sub-Sample	Depth (m)	CHROMIUM (mg/kg)
C15	TP47	0-0.15	23
	TP48	0-0.15	22
	TP49	0-0.15	4.2
C22	TP68	0-0.15	16
	TP69	0-0.15	23
	TP70	0-0.15	39
C25	TP78	0-0.15	52
	TP79	0-0.15	42
	TP80	0-0.15	13
C40	TP128	0-0.15	42
	TP129	0-0.15	23
	TP130	0-0.15	9.6
C43	TP143	0-0.15	38
	TP144	0-0.15	28
	TP145	0-0.15	13
C44	TP169	0-0.15	38
	TP170	0-0.15	39
	TP179	0-0.15	16
C57	TP160	0-0.15	12
	TP163	1.0-1.3	55
	TP163	0.5-0.8	21
C60	TP195	0-0.15	38
	TP196	0-0.15	32
	TP197	0-0.15	31
Limit of Reporting (LOR)			0.3
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)			
Health-based Investigation Levels (HIL) A - ^a Residential A			100
Ecological Investigation Level (EIL)			400

a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary

TABLE H2
COPPER TEST RESULTS
SUB-SAMPLES
(Ref No: 13552/1-AB)

Composite Number	Sub-Sample	Depth (m)	COPPER (mg/kg)
C57	TP160	0-0.15	61
	TP163	1.0-1.3	640
	TP163	0.5-0.8	180
C60	TP195	0-0.15	270
	TP196	0-0.15	12
	TP197	0-0.15	15
Limit of Reporting (LOR)			0.5
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)			
Health-based Investigation Levels (HIL) A - ^a Residential A			6000
Ecological Investigation Level (EIL)			220

a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary

TABLE H3
LEAD TEST RESULTS
SUB-SAMPLES
(Ref No: 13552/1-AB)

Composite Number	Sub-Sample	Depth (m)	LEAD (mg/kg)
C52	TP154	0-0.15	150
	TP154	0.5-0.8	93
	TP154	1.0-1.3	190
C57	TP160	0-0.15	35
	TP163	1.0-1.3	410
	TP163	0.5-0.8	130
Limit of Reporting (LOR)			1
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)			
Health-based Investigation Levels (HIL) A - ^a Residential A			300
Ecological Investigation Level (EIL)			1100

a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary

TABLE H4
ZINC TEST RESULTS
SUB-SAMPLES
(Ref No: 13552/1-AB)

Composite Number	Sub-Sample	Depth (m)	ZINC (mg/kg)	ZINC (mg/kg)
C51	TP151	0-0.15	87	-
	TP152	0-0.15	150	-
	TP153	0-0.15	92	-
C57	TP160	0-0.15	-	120
	TP163	1.0-1.3	-	1500
	TP163	0.5-0.8	-	470
Limit of Reporting (LOR)			0.5	0.5
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)				
Health-based Investigation Levels (HIL) A - ^a Residential A			7400	7400
Ecological Investigation Level (EIL)			480	600

a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

TABLE 11
TOTAL PETROLEUM HYDROCARBONS (TPH) AND BTEX TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

												NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)																															
Sample Location	Depth (m)	Soil type	TPH (mg/kg)					BTEX (mg/kg)				Health Screening Levels (HSL) A Low density residential							Ecological Screening Levels for fine-grained soil Urban residential							Ecological Screening Levels for coarse-grained soil Urban residential																	
			F1	F2*	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2*	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES										
TP41	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP41	0.5-10.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP42	1.0-1.3	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP43	0.5-0.7	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP53	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP66	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
TP67	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-								
Limits of Reporting (LOR)			25	25	25	90	120	0.1	0.1	0.1	0.3																																

Notes: F1: C6-C10 less BTEX
F2*: >C10-C16 less Naphthalene
F2**: >C10-C16
F3: >C16-C34
F4: >C34-C40
NL: Not Limiting

TABLE 12
TOTAL PETROLEUM HYDROCARBONS (TPH) AND BTEX TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

												NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)																							
			TPH (mg/kg)					BTEX (mg/kg)				Health Screening Levels (HSL) A Low density residential						Ecological Screening Levels for fine-grained soil Urban residential								Ecological Screening Levels for coarse- grained soil Urban residential									
Sample Location	Depth (m)	Soil type	F1	F2*	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2*	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES		
SP1-2	0.5-0.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP2-1	0.5-0.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP2-1	1.0-1.3	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP2-1	1.5-1.6	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP2-2	0.5-0.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP3-1	0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP3-2	0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
SP3-3	0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-		
Limits of Reporting (LOR)			25	25	25	90	120	0.1	0.1	0.1	0.3																								

Notes: F1: C6-C10 less BTEX
F2*: >C10-C16 less Naphthalene
F2**: >C10-C16
F3: >C16-C34
F4: >C34-C40
NL: Not Limiting

TABLE 13
TOTAL PETROLEUM HYDROCARBONS (TPH) AND BTEX TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

			NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)																																	
Sample Location	Depth (m)	Soil type	TPH (mg/kg)					BTEX (mg/kg)				Health Screening Levels (HSL) A Low density residential							Ecological Screening Levels for fine-grained soil Urban residential							Ecological Screening Levels for coarse-grained soil Urban residential										
			F1	F2*	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2*	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES	F1	F2**	F3	F4	BENZENE	TOLUENE	ETHYLBENZENE	XYLENES			
TP74	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP81	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP82	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP93	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.1	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP174	0.0-0.15	clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP184	0.0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP155	0-0.15	clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP156	0-0.15	clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP160	1.5-1.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP163	0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP165	0.5-0.7	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP166	1.0-1.3	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP167	1.0-1.3	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP168	1.0-1.2	Clay	<25	<25	<25	92	<120	<0.1	<0.1	<0.1	<0.3	90	NL	1	NL	NL	310	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP195	0-0.15	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
TP232	0.5-0.8	Clay	<25	<25	<25	<90	<120	<0.1	<0.1	<0.1	<0.3	50	280	0.7	480	NL	110	180	120	1300	5600	65	105	125	45	-	-	-	-	-	-	-	-	-	-	-
Limits of Reporting (LOR)			25	25	25	90	120	0.1	0.1	0.1	0.3																									

Notes: F1: C6-C10 less BTEX
F2*: >C10-C16 less Naphthalene
F2**: >C10-C16
F3: >C16-C34
F4: >C34-C40
NL: Not Limiting

TABLE J1
POLYCYCLIC AROMATIC HYDROCARBONS (PAH) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
			PAH (mg/kg)				Health-based Investigation Levels (HIL) A - Residential A		Health Screening Level (HSL) A - Low density residential	Generic Ecological Investigation Level (EIL) - Urban residential	Ecological Screening Level (ESL) - Urban residential
Sample Location	Depth (m)	Soil type	BaP TEQ	TOTAL PAHs	NAPHTHALENE	BENZO(a)PYRENE (BaP)	BaP TEQ	TOTAL PAHs	NAPHTHALENE	NAPHTHALENE	BENZO(a)PYRENE (BaP)
TP41	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP41	0.5-10.8	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP42	1.0-1.3	Clay	<0.3	<0.8	<0.1	<0.1	3	300	NL	170	0.7
TP43	0.5-0.7	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP53	0.0-0.15	Clay	<0.3	<0.8	<0.1	0.1	3	300	5	170	0.7
TP66	0.0-0.15	Clay	<0.3	1.4	<0.1	0.1	3	300	5	170	0.7
TP67	0.0-0.15	Clay	0.5	3.9	<0.1	0.3	3	300	5	170	0.7
Limits of Reporting (LOR)			0.3	0.8	0.1	0.1					

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.
NL: Not Limiting

TABLE J2
POLYCYCLIC AROMATIC HYDROCARBONS (PAH) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)											
			PAH (mg/kg)				Health-based Investigation Levels (HIL) A - Residential A		Health Screening Level (HSL) A - Low density residential	Generic Ecological Investigation Level (EIL) - Urban residential	Ecological Screening Level (ESL) - Urban residential
Sample Location	Depth (m)	Soil type	BaP TEQ	TOTAL PAHs	NAPHTHALENE	BENZO(a)PYRENE (BaP)	BaP TEQ	TOTAL PAHs	NAPHTHALENE	NAPHTHALENE	BENZO(a)PYRENE (BaP)
SP1-2	0.5-0.8	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
SP2-1	0.5-0.8	Clay	0.8	4.9	<0.1	0.5	3	300	5	170	0.7
SP2-1	1.0-1.3	Clay	0.7	6.2	<0.1	0.5	3	300	NL	170	0.7
SP2-1	1.5-1.6	Clay	0.3	2.6	<0.1	0.2	3	300	NL	170	0.7
SP2-2	0.5-0.8	Clay	0.6	4.8	<0.1	0.4	3	300	5	170	0.7
SP3-1	0-0.15	Clay	<0.2	<0.8	<0.1	<0.1	3	300	5	170	0.7
SP3-2	0-0.15	Clay	<0.2	<0.8	<0.1	<0.1	3	300	5	170	0.7
SP3-3	0-0.15	Clay	<0.2	<0.8	<0.1	<0.1	3	300	5	170	0.7
Limits of Reporting (LOR)			0.3	0.8	0.1	0.1					

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

NL: Not Limiting

TABLE J3
POLYCYCLIC AROMATIC HYDROCARBONS (PAH) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

							NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)				
			PAH (mg/kg)				Health-based Investigation Levels (HIL) A - Residential A		Health Screening Level (HSL) A - Low density residential	Generic Ecological Investigation Level (EIL) - Urban residential	Ecological Screening Level (ESL) - Urban residential
			BaP TEQ	TOTAL PAHs	NAPHTHALENE	BENZO(a)PYRENE (BaP)	BaP TEQ	TOTAL PAHs	NAPHTHALENE	NAPHTHALENE	BENZO(a)PYRENE (BaP)
Sample Location	Depth (m)	Soil type	BaP TEQ	TOTAL PAHs	NAPHTHALENE	BENZO(a)PYRENE (BaP)	BaP TEQ	TOTAL PAHs	NAPHTHALENE	NAPHTHALENE	BENZO(a)PYRENE (BaP)
TP74	0.0-0.15	Clay	<0.3	<0.8	<0.1	0.1	3	300	5	170	0.7
TP81	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP82	0.0-0.15	Clay	0.3	1.4	<0.1	0.2	3	300	5	170	0.7
TP93	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
SP2-1	0.5-0.8	Sand	0.8	4.9	<0.1	0.5	3	300	3	170	0.7
SP2-1	1.0-1.3	Sand	0.8	6.2	<0.1	0.5	3	300	NL	170	0.7
SP2-1	1.5-1.6	Sand	0.4	2.6	<0.1	0.2	3	300	NL	170	0.7
SP2-2	0.5-0.8	Sand	0.7	4.8	<0.1	0.4	3	300	3	170	0.7
SP3-1	0.0-0.15	Sand	<0.3	<0.8	<0.1	<0.1	3	300	3	170	0.7
SP3-2	0.0-0.15	Sand	<0.3	<0.8	<0.1	<0.1	3	300	3	170	0.7
SP3-3	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP174	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP184	0.0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP155	0-0.15	Clay	<0.1	0.9	<0.3	<0.1	3	300	5	170	0.7
TP156	0-0.15	Clay	<0.1	7.8	1.1	0.8	3	300	5	170	0.7
TP160	1.5-1.8	Clay	<0.3	<0.8	<0.1	<0.1	3	300	NL	170	0.7
TP163	0-0.15	Clay	<0.3	1.3	<0.1	0.1	3	300	5	170	0.7
TP165	0.5-0.7	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP166	1.0-1.3	Clay	<0.3	<0.8	<0.1	<0.1	3	300	NL	170	0.7
TP167	1.0-1.3	Clay	<0.3	<0.8	<0.1	<0.1	3	300	NL	170	0.7
TP168	1.0-1.2	Clay	<0.3	<0.8	<0.1	<0.1	3	300	NL	170	0.7
TP195	0-0.15	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
TP232	0.5-0.8	Clay	<0.3	<0.8	<0.1	<0.1	3	300	5	170	0.7
Limits of Reporting (LOR)			0.3	0.8	0.1	0.1					

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

NL: Not Limiting

TABLE K1
ORGANOCHLORINE PESTICIDES (OCP) & POLYCHLORINATED BIPHENYLS (PCB) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

		OCP (mg/kg)										(mg/kg)
		HEXACHLOROBENZENE (HCB)	HEPTACHLOR	ALDRIN+DIELDRIN	ENDRIN	METHOXYCHLOR	MIREX	ENDOSULFAN (alpha, beta & sulphate)	DDD+DDE+DDT	DDT	CHLORDANE (alpha & gamma)	
Sample Location	Depth (m)											PCB
TP25	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP41	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP41	0.5-10.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP42	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP42	1.0-1.3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP43	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP43	0.5-0.7	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP53	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP66	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP67	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
Limits of Reporting (LOR)		0.1	0.1	0.15	0.2	0.1	0.1	0.5	0.6	0.2	0.2	1
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)												
Health-based Investigation Levels (HIL) A ^a Residential A		10	6	6	10	300	10	270	240		50	1
Ecological Investigation Levels (EIL) - Urban residential		180 ^b										

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Generic EIL for DDT

TABLE K2
ORGANOCHLORINE PESTICIDES (OCP) & POLYCHLORINATED BIPHENYLS (PCB) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location	Depth (m)	OCP (mg/kg)										PCB (mg/kg)
		HEXACHLOROBENZENE (HCB)	HEPTACHLOR	ALDRIN+DIELDRIN	ENDRIN	METHOXYCHLOR	MIREX	ENDOSULFAN (alpha, beta & sulphate)	DDD+DDE+DDT	DDT	CHLORDANE (alpha & gamma)	
SP1-2	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP2-1	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP2-1	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP2-1	1.0-1.3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP2-1	1.5-1.6	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP2-2	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP2-2	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	14
SP2-2	1.0-1.3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP2-2	1.5-1.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP3-1	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP3-1	0.5-0.7	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP3-2	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP3-2	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
SP3-3	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
SP3-3	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
Limits of Reporting (LOR)		0.1	0.1	0.15	0.2	0.1	0.1	0.5	0.6	0.2	0.2	1
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)												
Health-based Investigation Levels (HIL) A ^a - Residential A		10	6	6	10	300	10	270	240		50	1
Ecological Investigation Levels (EIL) - Urban residential		180 ^b										

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Generic EIL for DDT

TABLE K3
ORGANOCHLORINE PESTICIDES (OCP) & POLYCHLORINATED BIPHENYLS (PCB) TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location	Depth (m)	OCP (mg/kg)										PCB (mg/kg)
		HEXACHLOROBENZENE (HCB)	HEPTACHLOR	ALDRIN+DIELDRIN	ENDRIN	METHOXYCHLOR	MIREX	ENDOSULFAN (alpha, beta & sulphate)	DDD+DDE+DDT	DDT	CHLORDANE (alpha & gamma)	
TP74	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP81	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP82	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP93	0.0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP95	0.0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP174	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP139	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP147	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP154	1.0-1.3	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP155	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP155	1.5-1.8	<0.1	<0.1	0.4	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	0.4	-
TP156	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP175	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP177	0-0.15	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP181	0.45-0.55	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP183	1.0-1.2	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP160	1.5-1.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP163	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP164	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP165	0.5-0.7	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP166	0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP166	1.0-1.3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP167	1.0-1.3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP168	1.0-1.2	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP195	0.5-0.8	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
TP232	0.5-0.8	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	<1
TP209	0.0-0.15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2	-
Limits of Reporting (LOR)		0.1	0.1	0.15	0.2	0.1	0.1	0.5	0.6	0.2	0.2	1
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)												
Health-based Investigation Levels (HIL) A ^a Residential A		10	6	6	10	300	10	270	240		50	1
Ecological Investigation Levels (EIL) - Urban residential		180 ^b										

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Generic EIL for DDT

TABLE L1
ORGANOCHLORINE PESTICIDES (OCP) TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AA)

Composite Number	OCP (mg/kg)									
	HEXACHLOROBENZENE (HCB)	HEPTACHLOR	ALDRIN+DIELDRIN	ENDRIN	METHOXYCHLOR	MIREX	ENDOSULFAN (alpha, beta & sulphate)	DDD+DDE+DDT	DDT	CHLORDANE (alpha & gamma)
C1	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C2	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C3	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C5	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C7	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C9	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C10	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C11	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C13	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C15	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C16	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C18	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C19	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C21	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
Limits of Reporting (LOR)	0.1	0.1	0.15	0.2	0.1	0.1	0.5	0.6	0.2	0.2
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - Residential A ^a	10	6	6	10	300	10	270	240		50
Adjusted HIL ^b	3	2	2	3	100	3	90	80		17
Ecological Investigation Level (EIL) - Urban residential									180 ^c	
Adjusted EIL ^b									60	

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3; Adjusted EIL=EIL/3

c: Generic EIL for DDT

TABLE L2
ORGANOCHLORINE PESTICIDES (OCP) TEST RESULTS
COMPOSITED SAMPLES
(Ref No: 13552/1-AA)

Composite Number	OCP (mg/kg)									
	HEXACHLOROBENZENE (HCB)	HEPTACHLOR	ALDRIN+DIELDRIN	ENDRIN	METHOXYCHLOR	MIREX	ENDOSULFAN (alpha, beta & sulphate)	DDD+DDE+DDT	DDT	CHLORDANE (alpha & gamma)
C22	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C23	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C24	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C27	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C28	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C29	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C30	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C31	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C33	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C35	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C36	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C37	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C38	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C39	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C41	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C43	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C44	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C45	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C46	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C47	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C48	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C50	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C52	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C54	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C56	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C57	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C59	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C61	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C63	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C64	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C66	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C67	<0.1	<0.1	<0.15	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C68	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C69	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C70	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C71	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C73	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C74	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
C75	<0.1	<0.1	<0.3	<0.2	<0.1	<0.1	<0.5	<0.6	<0.2	<0.2
Limits of Reporting (LOR)	0.1	0.1	0.15	0.2	0.1	0.1	0.5	0.6	0.2	0.2
NATIONAL ENVIRONMENT PROTECTION AMENDMENT MEASURE (2013)										
Health-based Investigation Levels (HIL) A - ^a Residential A	10	6	6	10	300	10	270	240		50
Adjusted HIL ^b	3	2	2	3	100	3	90	80		17
Ecological Investigation Level (EIL) - Urban residential									180 ^c	
Adjusted EIL ^b									60	

Notes: a: Residential with garden / accessible soil (home grown produce <10% fruit and vegetable intake (no poultry)), also includes childcare centres, preschools and primary schools.

b: Adjusted HIL=HIL/3;Adjusted EIL=EIL/3

c: Generic EIL for DDT

TABLE M1
ASBESTOS TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location	Depth (m)	ASBESTOS
Soil Samples		
TP41	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP41	0.5-10.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP42	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP42	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP43	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP43	0.5-0.7	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP49	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP53	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP66	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP67	0.0-0.15	Friable Chrysotile Asbestos Detected (0.002% w/w)
TP67	0.5-0.8	Friable Chrysotile Asbestos Detected (0.005% w/w)
SP1-1	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP1-1	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP1-2	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP1-3	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w
SP1-3	0.5-0.5	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP2-1	0.0-0.15	Friable Chrysotile Asbestos found (0.003% w/w)
SP2-1	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP2-1	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP2-1	1.5-1.6	Friable Chrysotile Asbestos found (0.006% w/w)
SP2-2	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP2-2	0.5-0.8	Friable Chrysotile Asbestos found (0.018% w/w)
SP2-2	1.0-1.3	Bonded Chrysotile Asbestos found (0.02% w/w)
SP2-2	1.5-1.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-1	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-1	0.5-0.7	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-2	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-2	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-3	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
SP3-3	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w

TABLE M2
ASBESTOS TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location	Depth (m)	ASBESTOS
Soil Samples		
TP74	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP74	0.5-0.6	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP81	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP82	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP93	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP95	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP95	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP171	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP172	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP172	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP173	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP173	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP174	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP184	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP184	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP141	0-0.15	Friable Chrysotile Asbestos found (0.018% w/w)
TP147	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP151	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP152	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP153	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP154	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP154	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w

TABLE M3
ASBESTOS TEST RESULTS
DISCRETE SAMPLES
(Ref No: 13552/1-AA)

Sample Location	Depth (m)	ASBESTOS
Soil Samples		
TP155	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP156	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP157	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP159	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP159	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP161	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP162	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP181	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP182	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP183	0-0.15	Friable Chrysotile Asbestos found (0.004% w/w)
TP183	1.0-1.2	Friable Chrysotile Asbestos found (0.002% w/w)
TP160	1.5-1.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP165	0.5-0.7	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP166	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP167	0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP167	1.0-1.3	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP195	0-0.15	Friable Chrysotile & Crocidolite found (0.004% w/w)
TP195	0.5-0.8	Friable Chrysotile Asbestos found (0.005% w/w)
TP199	0-0.1	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP232	0.0-0.15	Friable Chrysotile Asbestos found (0.010% w/w)
TP232	0.5-0.8	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP232	1.0-1.2	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP209	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
TP211	0.0-0.15	No bonded asbestos found at the limit of reporting of 0.01% w/w and no friable asbestos found at the limit of reporting of 0.001% w/w
Fibro-cement Pieces		
TP141	0-0.15	Bonded Amosite & Chrysotile Asbestos Detected
TP141	0.2-0.6	Bonded Amosite & Chrysotile Asbestos Detected
TP154	0.5-0.8	Bonded Amosite & Chrysotile Asbestos Detected
TP160	1.5-1.8	No asbestos detected
TP163	0-0.15	Bonded Chrysotile Asbestos Detected
TP163	0.5-0.8	Bonded Chrysotile & Crocidolite Asbestos Detected
TP167	1.3-2.3	Bonded Amosite & Chrysotile Asbestos Detected
TP168	0-0.15	Bonded Amosite & Chrysotile Asbestos Detected
TP168	0.5-0.8	Bonded Chrysotile Asbestos Detected
TP168	1.0-1.2	Bonded Chrysotile Asbestos Detected

APPENDIX A

NSW LAND & PROPERTY INFORMATION RECORDS

13552/1

Summary of Proprietors

Lot 2 DP260476

Year	Proprietor
2014 - 2016	Clydesdale Property Development Group Pty Limited
2002 – 2014	Francis George Pace
1963 - 2002	Associated Dairies Pty Ltd previously known as Associated Dairies (Toongabbie) Pty Limited
1961 - 1963	Permanent Trustee Company of New South Wales and Matthew McFadden, solicitor
1945 - 1961	Marcia Evelyn Williams, spinster
1944 - 1945	Keitha Dawn James, spinster and Norman Hampden Mathews, company director
1935 - 1944	Joseph Ernest James, retired auctioneer

Advance Legal Searchers Pty Ltd hereby certifies that the information contained in this document has been provided electronically by the Registrar General in accordance with Section 96B(2) of the Real Property Act.

Information provided through Tri-Search an approved LPINSW Information Broker

LAND AND PROPERTY INFORMATION NEW SOUTH WALES - TITLE SEARCH

FOLIO: 2/260476

SEARCH DATE	TIME	EDITION NO	DATE
7/4/2016	9:57 AM	12	4/4/2016

LAND

LOT 2 IN DEPOSITED PLAN 260476

AT CLYDESDALE

LOCAL GOVERNMENT AREA BLACKTOWN

PARISH OF ROOTY HILL COUNTY OF CUMBERLAND

TITLE DIAGRAM DP260476

FIRST SCHEDULE

CLYDESDALE PROPERTY DEVELOPMENT GROUP PTY LIMITED (T AI859301)

SECOND SCHEDULE (8 NOTIFICATIONS)

- 1 RESERVATIONS AND CONDITIONS IN THE CROWN GRANT(S)
- 2 O385929 EASEMENT FOR TRANSMISSION LINE AFFECTING THE PART
OF THE LAND ABOVE DESCRIBED SHOWN 70 WIDE IN DP639546
O745641 EASEMENT NOW VESTED IN NEW SOUTH WALES
ELECTRICITY TRANSMISSION AUTHORITY
- * 3 AK196154 CAVEAT BY CYAN STONE CLYDESDALE PTY LTD
- * 4 AK196164 CAVEAT BY CYAN STONE CLYDESDALE DEVELOPMENT PTY LTD
- * 5 AK196165 CAVEAT BY CYAN STONE CLYDESDALE HOLDINGS PTY LTD
- * 6 AK196166 CAVEAT BY CYAN STONE CLYDESDALE ESTATE 3 PTY LTD
- * 7 AK196167 CAVEAT BY CYAN STONE CLYDESDALE ESTATE 2 PTY LTD
- * 8 AK196168 CAVEAT BY CYAN STONE CLYDESDALE ESTATE 1 PTY LTD

NOTATIONS

UNREGISTERED DEALINGS: NIL

*** END OF SEARCH ***

13552/1

PRINTED ON 7/4/2016

*ANY ENTRIES PRECEDED BY AN ASTERISK DO NOT APPEAR ON THE CURRENT EDITION OF THE CERTIFICATE OF TITLE. WARNING: THE INFORMATION APPEARING UNDER NOTATIONS HAS NOT BEEN FORMALLY RECORDED IN THE REGISTER.

PLAN AMENDED AT SURVEYOR'S REQUEST #11 071905 9.0

APPENDIX B

SECTION 149 (2) PLANNING CERTIFICATE

Applicant GEOTECHNIQUE PTY LTD

Property LOT 2 DP 260476
1270 RICHMOND ROAD,

Suburb MARSDEN PARK Parish of Rooty Hill

NOTE: The land the subject of this Certificate is known to be located in the suburb of Marsden Park.
For all correspondence and property transactions this suburb name is to be used.

PART A
PRESCRIBED INFORMATION PROVIDED PURSUANT TO
SECTION 149(2) OF THE ENVIRONMENTAL PLANNING
AND ASSESSMENT ACT 1979 (EP&A Act 1979)

NOTE: The following information is provided pursuant to Section 149(2) of the EP&A Act 1979, as prescribed by Schedule 4 of the *Environmental Planning and Assessment Regulation 2000*, and is applicable as of the date of this certificate.

1. NAMES OF RELEVANT PLANNING INSTRUMENTS AND DEVELOPMENT CONTROL PLANS

1.1 Environmental Planning Instruments

The abovementioned land is affected by the following environmental planning instrument and proposed environmental planning instrument/s (where applicable) which have been the subject of community consultation or on public exhibition under the Act.

Blacktown Local Environmental Plan 1988 (Refer to Attachment A)

Blacktown Local Environmental Plan 1988 specifies the purposes for which development may be carried out or are prohibited within this zone.

Council's current Local Environmental Plan (LEP) first came into force in 1988 and has since been subject to over 200 amendments. The current LEP is in need of a comprehensive review that will, amongst other things, address how future housing, employment and recreation needs will be satisfied in the Blacktown Local Government Area. Whilst there is no proposed comprehensive City-wide environmental planning instrument that is or has been the subject of community consultation or on public

exhibition, Council is currently working on the review of its LEP, via the preparation of various local strategies that will inform the preparation of a new City-wide LEP, based on the State Government's standard instrument. All Councils across NSW are required to prepare new LEPs based on this standard instrument. Ultimately, the intention is that all LEPs will use the same planning terminology, zones and key clauses. Blacktown City Council is working towards placing a draft City-wide LEP on public exhibition, for comment, in 2012. Until then, all work relating to the LEP will be confidential.

1.2 Development Control Plans

The land is affected by Blacktown Development Control Plan (DCP) 2006.

This DCP provides general guidance for the development of land within the City of Blacktown.

1.3 Relevant State Environmental Planning Policies (SEPPs), including draft policies, or Regional Environmental Plans deemed to be SEPPs

State Environmental Planning Policy No. 1 - Development Standards

The policy requires that variations to development standards must meet the objectives of local plans and controls. It makes development standards more flexible. It allows councils to approve a development proposal that does not comply with a set standard where this can be shown to be unreasonable or unnecessary.

State Environmental Planning Policy No. 4 - Development Without Consent and Miscellaneous Complying Development

This policy permits minor development and activities on land without a development application or through alternative assessment. This policy should be read in conjunction with Councils controls for Exempt and Complying Development.

State Environmental Planning Policy - Housing For Seniors Or People With a Disability 2004

State Environmental Planning Policy No. 5 - Housing for Older People and People with a Disability has been repealed by a new State Environmental Planning Policy (SEPP) - Seniors Living 2004, which was renamed to SEPP (Housing for Seniors or People with a Disability) 2004 effective from 12 October 2007. The new SEPP sets out standards and design requirements for self-care housing, "serviced" self-care housing, vertical villages, residential care facilities and hostels. The Policy recognises that demand for these forms of housing will grow over the next 10 - 15 years. It encourages the development of high quality accommodation for our ageing population and for people who have disabilities - housing that is in keeping with the local neighbourhood.

State Environmental Planning Policy No. 6 - Number of Storeys in a Building

This policy sets out a method for determining the number of storeys in a building, to prevent possible confusion arising from the interpretation of various environmental planning instruments.

State Environmental Planning Policy No. 19 - Bushland in Urban Areas

This policy protects and preserves bushland within certain urban areas, as part of the natural heritage or for recreational, educational and scientific purposes. The policy is designed to protect bushland in public open space zones and reservations, and to ensure that bush preservation is given a high priority when local environmental plans for urban development are prepared.

State Environmental Planning Policy No. 30 - Intensive Agriculture

This policy requires development consent for cattle feedlots having a capacity of 50 or more cattle or piggeries having a capacity of 200 or more pigs. The policy sets out information and public notification requirements to ensure there are effective planning control over this export-driven rural industry. The policy does not alter if, and where, such development is permitted, or the functions of the consent authority.

State Environmental Planning Policy No. 55 - Remediation of Land

This policy provides state-wide planning controls for the remediation of contaminated land. The policy states that land must not be developed if it is unsuitable for a proposed use because it is contaminated. If the land is unsuitable, remediation must take place before the land is developed. The policy makes remediation permissible across the State, defines when consent is required, requires all remediation to comply with standards, ensures land is investigated if contamination is suspected, and requires councils to be notified of all remediation proposals.

State Environmental Planning Policy No. 62 - Sustainable Aquaculture

This policy encourages the sustainable expansion of the industry in NSW. The policy implements the regional strategies already developed by creating a simple approach to identify and categorise aquaculture development on the basis of its potential environmental impact. The SEPP also identifies aquaculture development as a designated development only where there are potential environmental risks.

State Environmental Planning Policy No. 64 - Advertising and Signage

This policy aims to ensure that outdoor advertising is compatible with the desired amenity and visual character of an area, provides effective communication in suitable locations and is of high quality design and finish. The SEPP was amended in August 2007 to permit and regulate outdoor advertising in transport corridors (e.g. freeways, tollways and rail corridors). The amended SEPP also aims to ensure that public benefits may be derived from advertising along and adjacent to transport corridors.

State Environmental Planning Policy - Affordable Rental Housing 2009

This policy establishes a consistent planning regime for the provision of affordable rental housing. The policy provides incentives for new affordable rental housing, facilitates the retention of existing affordable rentals, and expands the role of not-for-profit providers. It also aims to support local centres by providing housing for workers close to places of work, and facilitate development of housing for the homeless and other disadvantaged people.

State Environmental Planning Policy - Exempt and Complying Development Codes

This policy streamlines assessment processes for development that complies with specified development standards. The policy provides exempt and complying development codes that have State-wide application, identifying, in the General Exempt Development Code, types of development that are of minimal environmental impact that may be carried out without the need for development consent; and, in the General Housing Code, types of complying development that may be carried out in accordance with a complying development certificate as defined in the Environmental Planning and Assessment Act 1979.

State Environmental Planning Policy - Major Development 2005

The SEPP facilitates the development, redevelopment or protection of important urban, coastal and regional sites of economic, environmental or social significance to the State so as to facilitate the orderly use, development or conservation of those State significant sites for the benefit of the State. Schedule 3 of the SEPP identifies State significant sites and provides planning provisions for those sites. Note: This SEPP was formerly known as State Environmental Planning Policy (Major Projects) 2005.

State Environmental Planning Policy - Sydney Region Growth Centres 2006

This policy provides for the co-ordinated release of land for residential, employment and other urban development in the North West and South West Growth Centres of the Sydney Region (in conjunction with the Environmental Planning and Assessment Regulation relating to precinct planning). The policy identifies certain land as being within a residential, employment, environmental, recreation or infrastructure zone.

State Environmental Planning Policy - Basix

This SEPP operates in conjunction with Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004 to ensure the effective introduction of BASIX in NSW. The SEPP ensures consistency in the implementation of BASIX throughout the State by overriding competing provisions in other environmental planning instruments and development control plans, and specifying that SEPP 1 does not apply in relation to any development standard arising under BASIX. The draft SEPP was exhibited together with draft Environmental Planning and Assessment Amendment (Building Sustainability Index: BASIX) Regulation 2004.

State Environmental Planning Policy - Infrastructure 2007

This policy provides a consistent planning regime for infrastructure and the provision of services across NSW, along with providing for consultation with relevant public authorities during the assessment process. The SEPP supports greater flexibility in the location of infrastructure and service facilities along with improved regulatory certainty and efficiency.

State Environmental Planning Policy - Mining, Petroleum Production and Extractive Industries 2007

This policy aims to provide for the proper management and development of mineral, petroleum and extractive material resources for the social and economic welfare of the State. The policy establishes appropriate planning controls to encourage ecologically sustainable development.

State Environmental Planning Policy - Temporary Structures 2007

This policy provides for the erection of temporary structures and the use of places of public entertainment, while protecting public safety and local amenity. The SEPP supports the transfer of the regulation of places of public entertainment and temporary structures (such as tents, marquees and booths) from the Local Government Act 1993 to the Environmental Planning and Assessment Act 1979.

Sydney Regional Environmental Plan No. 9 - Extractive Industry Sydney Region

This plan aims to protect the viability of extractive resources in the Sydney Metropolitan Area by ensuring consideration is given to the impact of encroaching development.

Sydney Regional Environmental Plan No. 19 - Rouse Hill Development Area

Regional Environmental Plan No. 19 - Rouse Hill Development Area covers about 9,400 hectares in the north-west sector, north of Blacktown. The plan co-ordinates planning and decision-making for long term growth, identifying land that is suitable for urban purposes and providing for the orderly and economic development of an area within the North West Sector.

2. ZONING AND LAND USE UNDER RELEVANT ENVIRONMENTAL PLANNING INSTRUMENTS

- (a) Pursuant to Blacktown Local Environmental Plan (LEP) 1988 the land is zoned:

1(a) - GENERAL RURAL

- (b) Extracts from Blacktown Local Environmental Plan 1988 which specify the purposes for which development may be carried out within the zone/s applying to the land the subject of this Certificate are at Attachment A.

Should you require further information about the permissibility of development and related development standards it is recommended that you consult a full copy of Blacktown Local Environmental Plan 1988. It should be noted that the Environmental Planning & Assessment Act 1979, as amended, changes the way in which Blacktown Local Environmental Plan 1988 and other State Government issued environmental planning instruments should be interpreted. Pursuant to the amended Environmental Planning & Assessment Act 1979 Council's development consent is now required for all development regardless of its zoning/s, other than "exempt development" and "complying development", as defined in Blacktown Local Environmental Plan 1988.

- (c) Extracts from Blacktown Local Environmental Plan 1988 which specify the purpose for which development may not be carried out within the zone/s applying to the land the subject of this Certificate are at Attachment A.
- (d) An extract of the planning instrument at Attachment A provides details of the purposes for which development is prohibited within the zone applying to the land.
- (e) Blacktown Local Environmental Plan 1988 does not nominate minimum land dimensions for the erection of a dwelling-house. It is noted however that Blacktown Development Control Plan 2006 stipulates minimum areas for subdivision, integrated housing, dual occupancies and the like.

The minimum area upon which a dwelling house may be erected is 4000 square metres.

- (f) The land does not include or comprise a critical habitat. Critical habitat refers to habitat that is critical to the survival of endangered species, populations or ecological communities. Areas of critical habitat are declared under Part 3 of the Threatened Species Conservation Act 1995 and Part 7A of the Fisheries Management Act 1994.

- (g) The land is not within a conservation area.

- (h) This land contains an item of environmental heritage under the protection of Blacktown Local Environmental Plan 1988. Before any development can proceed in an area known to contain a heritage item, the consent of Council must be obtained.

This property is listed in the NSW State Heritage Register and is identified as being of particular heritage significance to the state. For further enquiries contact the Heritage Office.

This land is subject to a heritage classification by the National Trust. For further enquiries contact the National Trust of Australia.

3. COMPLYING DEVELOPMENT

Complying Development under the *General Housing Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *Rural Housing Code* of the Codes SEPP may not be carried out on the land unless complying development is carried out on the part of the lot to which clause 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008 does not apply. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *Housing Alterations Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *General Development Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *General Commercial and Industrial Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *Subdivisions Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Complying Development under the *Demolition Code* of the Codes SEPP may not be carried out on the land. The land is affected by specific land exemptions:

- (a) it contains an item listed on the State Heritage Register under the Heritage Act 1977.
- (b) it contains a heritage item or draft heritage item.

Disclaimer: This information only addresses matters raised in Clauses 1.17A and 1.19 of State Environmental Planning Policy (Exempt and Complying Development Codes) 2008. It is your responsibility to ensure that you comply with the general requirements of the State Environmental Planning Policy (Exempt and Complying Codes) 2008. Failure to comply with these provisions may mean that a Complying Development Certificate issued under the provisions of State Environmental Planning Policy (Exempt and Complying Codes) 2008 is invalid.

4. COASTAL PROTECTION

The land is not affected by the operation of Sections 38 or 39 of the *Coastal Protection Act, 1979*.

5. MINE SUBSIDENCE

The land has not been proclaimed to be a mine subsidence district within the meaning of Section 15 of the *Mine Subsidence Compensation Act, 1961*.

6. ROAD WIDENING AND ROAD REALIGNMENT

Blacktown Local Environmental Plan 1988 and Blacktown Development Control Plan 2006 nominate preferred road patterns throughout the City.

The land is not affected by road widening/road realignment under Division 2 of Part 3 of the Roads Act 1993 and/or environmental planning instrument.

7. COUNCIL AND OTHER PUBLIC AUTHORITY POLICIES ON HAZARD RISK RESTRICTIONS

Council has not adopted any policies to restrict the development of the land by reason of the likelihood of landslip, bushfire, tidal inundation, subsidence or the occurrence of acid sulphate soils. Although the Council has not adopted a specific policy to restrict development on bush fire prone land, it is bound by statewide bush fire legislation that may restrict development. In this regard, refer to point 11 below.

Council has adopted a policy on contaminated land which may restrict the development of this land. The land contamination policy applies when zoning or land use changes are proposed on land which has previously been used for certain purposes or has the potential to be affected by such purposes undertaken on nearby lands. Council's records may not be sufficient to determine all previous uses on the land, or determine activities that may have taken place on this land. Consideration of Council's policy and the application of provisions under the relevant State legislation and guidelines is necessary.

7A. FLOOD RELATED DEVELOPMENT CONTROLS INFORMATION

In respect of mainstream or backwater flood-related development controls, Council has adopted a Floodplain Management Policy which may restrict the development of the land subject to this Certificate, including development for the purposes of dwelling houses, dual occupancies, multi-dwelling housing, residential flat buildings and any other purpose that requires the placement or erection of any structure on the land. The Flood Risk Precinct Maps prepared under the policy are based on the results of Engineering Flood Studies commissioned by Government Authorities and Council. These maps indicate that the land subject to this Certificate lies partly within the Medium Flood Risk Precinct and partly within the High Flood Risk Precinct. The term Medium Flood Risk Precinct is defined as land below the 100-year flood level that is not within a High Flood Risk Precinct. This is land that is not subject to a high hydraulic hazard or where there are no significant evacuation difficulties. The term High Flood Risk Precinct is defined as the area of land below the 100-year flood event that is either subject to a high hydraulic hazard or where there are significant evacuation difficulties. Further details are provided in the NSW Government's Floodplain Development Manual and are available from Council. Council does not warrant that the information provided or made available to you is complete. Council strongly recommends that, in all cases, you seek independent professional advice to supplement your enquiries.

This lot is shown flood prone on mapping provided by the Department of Planning. The investigation for this area has not been completed and all enquiries should be directed to the Department of Planning. Flood related development controls for this lot are provided in the Development Control Plan for this area, prepared by the Department of Planning. Where development is proposed within or adjacent to land that is shown on the Flood Prone Land figure as being affected by the 1% AEP level, Council may require a more detailed flood study to be undertaken by the applicant to confirm the extent on the flood affectation on that land.

8. LAND RESERVED FOR ACQUISITION

Clauses 17, 17A and 18 of Blacktown Local Environmental Plan 1988 provide for the acquisition of certain land zoned 5(a), 5(b), 5(c), 6(a) or 6(c) by a public authority.

9. CONTRIBUTIONS PLANS

Council currently levies contributions under Section 94 of the EP&A Act 1979 for facilities and services. The further development of the subject land may incur such contribution.

9A. BIODIVERSITY CERTIFIED LAND

The land is biodiversity certified within the meaning of the Threatened Species Conservation Act 1995.

10. BIOBANKING AGREEMENTS

Council has not been notified of the existence of a biodiversity agreement under the Threatened Species Conservation Act 1995.

11. BUSH FIRE PRONE LAND

The *Rural Fires and Environmental Assessment Legislation Amendment Act 2002*, which came into force on 1 August 2002, introduced development provisions for bush fire prone land as shown on a Bush Fire Prone Land Map. "Bush fire prone land" is land that has been designated by the Commissioner of the NSW Rural Fire Service as being bush fire prone due to characteristics of vegetation and topography. The land the subject of this certificate has been identified on Council's Bush Fire Prone Land Map as being:

clear of any bush fire prone land

On land that is bush fire prone, certain development may require further consideration under Section 79BA or Section 91 of the EP&A Act 1979 and under Section 100B of the *Rural Fires Act 1997*.

12. PROPERTY VEGETATION PLANS

Land to which this Certificate applies is not subject to a Property Vegetation Plan under the provisions of the *Native Vegetation Act 2003*.

13. ORDERS UNDER TREES (DISPUTES BETWEEN NEIGHBOURS) ACT 2006

Land to which this Certificate applies is not the subject of an order made under the *Trees (Disputes Between Neighbours) Act 2006*.

14. DIRECTIONS UNDER PART 3A

Land to which this Certificate applies is not subject to the above.

15. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR SENIORS HOUSING

Land to which this Certificate applies is not subject to the above.

16. SITE COMPATIBILITY CERTIFICATES FOR INFRASTRUCTURE

Land to which this Certificate applies is not subject to the above.

17. SITE COMPATIBILITY CERTIFICATES AND CONDITIONS FOR AFFORDABLE RENTAL HOUSING

Land to which this Certificate applies is not subject to the above.

18. MATTERS ARISING UNDER THE CONTAMINATED LAND MANAGEMENT ACT 1997 AND CONTAMINATED LAND MANAGEMENT AMENDMENT ACT 2008

- (a) The land to which this certificate relates has not been declared to be significantly contaminated land at the date when the certificate was issued.
- (b) The land to which the certificate relates is not subject to a management order at the date when the certificate was issued.

- (c) The land to which this certificate relates is not the subject of an approved voluntary management proposal at the date when the certificate was issued.
- (d) The land to which this certificate relates is not subject to an ongoing maintenance order as at the date when the certificate was issued.
- (e) The land to which this certificate relates is not the subject of a site audit statement provided to the Council.

19. NATION BUILDING AND JOBS PLAN (STATE INFRASTRUCTURE DELIVERY) ACT 2009

Land to which this Certificate applies is not subject to the above.

PART B
ADDITIONAL INFORMATION PROVIDED PURSUANT TO
SECTION 149(5) OF THE ENVIRONMENTAL PLANNING
AND ASSESSMENT ACT 1979 (EP&A Act 1979)

NOTE: When information pursuant to section 149(5) is requested the Council is under no obligation to furnish any of the information supplied herein pursuant to that section. Council draws your attention to section 149(6) which states that a Council shall not incur any liability in respect of any advice provided in good faith pursuant to sub-section (5). The absence of any reference to any matter affecting the land shall not imply that the land is not affected by any matter not referred to in this Certificate.

This advice is provided in accordance with Section 149(5) and 149(6) of the EP&A Act 1979:

The land is affected by a tree preservation control under Blacktown Local Environmental Plan 1988. A person shall not ringbark, cut down, lop, top, remove, injure or wilfully destroy any tree, or cause any tree to be ringbarked, cut down, topped, lopped, injured or wilfully destroyed, except with the consent of the Council.

The provisions of any covenant, agreement or instrument applying to this land purporting to restrict or prohibit certain development may be inconsistent with the provisions of a Regional Environmental Plan, State Environmental Planning Policy or Blacktown Local Environmental Plan 1988, in which case the provisions of any such covenant, agreement or instrument may be overridden.

This land contains an Aboriginal archaeological site under the protection of the National Parks and Wildlife Service Act, 1974. Before any development can proceed in an area known to contain Aboriginal archaeological sites, a consent to destroy must be obtained from the Director of the National Parks and Wildlife Service.

The *Commonwealth Environment Protection and Biodiversity Conservation Act 1999* provides protection for items of national significance. The Act requires a separate Commonwealth approval to be obtained where an action is likely to have significant impacts on items of national environmental significance. Items of national environmental significance include, amongst other things, nationally threatened animal and plant species and ecological communities. The Commonwealth Department of the Environment and Water Resources should be contacted for further advice.

General Manager

Per: _____

End of Certificate

APPENDIX C

NSW EPA NOTICES

Contaminated land - record of notices

Record under section 58 of the Contaminated Land Management Act 1997

This record is maintained by OEH in accordance with Part 5 of the [Contaminated Land Management Act 1997](#) (CLM Act).

The record **does** provide

- ✓ a record of written notices issued by OEH under the CLM Act, including preliminary investigation orders.
- ✓ the names of the sites, owners or occupiers **at the time of OEH action** in relation to the site
- ✓ copies of site audit statements (SAS) provided to OEH under section 52 of the CLM Act and relating to significantly contaminated land.

The record **does not** provide

- ✗ a record of all contaminated land in NSW. [See frequently asked questions](#)
- ✗ a list of [notifications of contamination](#) that OEH receives.
- ✗ the names of the sites, owners or occupiers if it changes **after OEH action** in relation to the site.
- ✗ some [personal information](#).

... [more about the CLM record of notices](#)

From 1 July 2009 there were changes to the terminology of certain OEH actions under the CLM Act. See the [list of these changes](#).

The record includes notices issued under sections 35 and 36 of the Environmentally Hazardous Chemicals Act 1985. These sections have been repealed. These notices are treated by the CLM Act as management orders.

Before using the record of notices see the [Disclaimer and terms of use](#).

As at Thursday, 7 April 2016 there are 1262 notices in the record relating to 344 sites.

[Show me the entire record](#) or [Search the record](#)

7 April 2016

[Home](#) [Contaminated land](#) [Record of notices](#)

Search results

Your search for: Suburb: MARSDEN PARK

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record and What's not in the record](#).

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.

This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register. [POEO public register](#)

[Search Again](#)

[Refine Search](#)

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... [more search tips](#)

Connect

Feedback

We Put

7 April 2016

[Home](#) [Contaminated land](#) [Record of notices](#)

Search results

Your search for:LGA: Blacktown City Council

Matched 7 notices relating to 2 sites.

[Search Again](#)

[Refine Search](#)

Suburb	Address	Site Name	Notices related to this site
KINGS PARK	21 Tattersall ROAD	Dow Corning	1 current and 4 former
SEVEN HILLS	27 Powers ROAD	Australian Waste Oil Refineries	2 current

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7 April 2016

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Search results

Your search for: **General Search** with the following criteria

Suburb - Marsden Park

returned 34 results

[Export to excel](#)

1 of 2 Pages

[Search Again](#)

Number	Name	Location	Type	Status	Issued date
7680	ASSOCIATED DAIRIES PTY LTD	1270 RICHMOND ROAD, MARSDEN PARK, NSW 2765	POEO licence	Surrendered	12 Jul 2000
1009789	ASSOCIATED DAIRIES PTY LTD	1270 RICHMOND ROAD, MARSDEN PARK, NSW 2765	s.58 Licence Variation	Issued	16 Jul 2001
6653	BARTTER ENTERPRISES PTY. LIMITED	SOUTH STREET , MARSDEN PARK, NSW 2765	POEO licence	Surrendered	19 Apr 2000
1014668	BARTTER ENTERPRISES PTY. LIMITED	SOUTH STREET , MARSDEN PARK, NSW 2765	s.58 Licence Variation	Issued	12 Apr 2002
1025286	BARTTER ENTERPRISES	SOUTH STREET ,	s.58 Licence	Issued	24 Mar 2003

	PTY. LIMITED	MARSDEN PARK, NSW Variation 2765			
1079567	BARTTER ENTERPRISES PTY. LIMITED	SOUTH STREET , s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	01 Nov 2007	
11497	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, POEO licence MARSDEN PARK, NSW 2765	Issued	20 Dec 2001	
1015376	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	03 Apr 2002	
1034185	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	24 Feb 2004	
1035619	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	07 Apr 2004	
1036931	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	24 May 2004	
1040181	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	25 Aug 2004	
1042674	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	15 Dec 2004	
1043785	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	07 Feb 2005	
1050775	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	14 Jul 2006	
1089097	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	18 Jul 2008	
1093057	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	17 Oct 2008	
1096556	BLACKTOWN WASTE	RICHMOND ROAD, s.58 Licence	Issued	10 Mar 2009	

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	SERVICES PTY LIMITED	MARSDEN PARK, NSW Variation 2765			
<u>1101188</u>	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	14 May 2009	
<u>1106136</u>	BLACKTOWN WASTE SERVICES PTY LIMITED	RICHMOND ROAD, s.58 Licence MARSDEN PARK, NSW Variation 2765	Issued	04 Sep 2009	

APPENDIX D

TEST PIT LOGS

Project	Proposed Clydesdale Park Estate	Job No	13552/1
Location	Lot 2 in DP260476, Richmond Road, Marsden Park	Refer to Drawing No	13552/1-AA1
Logged & Sampled by			SS

TABLE 1

Page 1 of 33

Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP1	0.0-0.15	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.4	NS			(ML) Clayey SILT, low plasticity, brown	
	0.4-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP2	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP3	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP4	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.4	NS			(ML) Clayey SILT, low plasticity, brown	
	0.4-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP5	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP6	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP7	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP8	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

Project	Proposed Clydesdale Park Estate	Job No	13552/1
Location	Lot 2 in DP260476, Richmond Road, Marsden Park	Refer to Drawing No	13552/1-AA1
Logged & Sampled by			SS

TABLE 1

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP9	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP10	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP11	0.0-0.25	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.25-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP12	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.4	NS			(ML) Clayey SILT, low plasticity, brown	
	0.4-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP13	0.0-0.25	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.25-0.5	NS			(ML) Clayey SILT, low plasticity, brown	
	0.5-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP14	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP15	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP16	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

Project	Proposed Clydesdale Park Estate	Job No	13552/1
Location	Lot 2 in DP260476, Richmond Road, Marsden Park	Refer to Drawing No	13552/1-AA1
Logged & Sampled by			SS

TABLE 1

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP17	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP18	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP19	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP20	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP21	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP22	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP23	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP24	0.0-0.3	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP25	0.0-0.2	0.0-0.15	07/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP26	0.0-0.25	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.25-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP27	0.0-0.2	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP28	0.0-0.4	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP29	0.0-0.3	0.0-0.15	09/03/2016		(ML) Clayey SILT, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP30	0.0-0.15	0.0-0.15	09/03/2016		(ML) Clayey SILT, low plasticity, brown, trace root fibres	
	0.15-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP31	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP32	0.0-0.2	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP33	0.0-0.4	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP34	0.0-0.15	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP35	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP36	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP37	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP38	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP39	0.0-0.2	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.4	NS			(ML) Clayey SILT, low plasticity, brown	
TP40	0.0-0.15	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP41	0.0-0.2	0.0-0.15	10/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with brick and concrete pieces and fine grained gravel, with root fibres	Inclusion of plastic
	0.2-0.8	0.5-0.8			FILL: Silty Clay, low to medium plasticity, brown, with brick and concrete pieces and fine grained gravel	
	0.8-1.0	0.85-0.95			(CL-CI) Silty CLAY, low to medium plasticity, brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP42	0.0-0.2	0.0-0.15	10/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with fine to coarse grained gravel	Inclusion of styrofoam
	0.2-1.5	0.5-0.8 1.0-1.3			FILL: Silty Clay, low to medium plasticity, brown, with bricks, concrete cobbles and boulders, trace plastics and wires	
	1.5-1.8	1.55-1.65			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP43	0.0-0.2	0.0-0.15	10/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with fine to coarse grained gravel and brick fragments, trace root fibres	
	0.2-0.7	0.5-0.7			FILL: Silty Clay, low to medium plasticity, brown, with fine to coarse grained gravel and brick fragments	
	0.7-0.9	0.75-0.85			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP44	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.5				(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP45	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP46	0.0-0.2	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.35	NS			(ML) Clayey SILT, low plasticity, brown	
TP47	0.0-0.3	0.0-0.15	09/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP48	0.0-0.3	0.0-0.15	09/03/2015		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP49	0.0-0.3	0.0-0.15	10/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with fine to coarse grained gravel	Rope observed
	0.3-0.5	0.35-0.45			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
	0.5-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP50	0.0-0.3	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP51	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP52	0.0-0.3	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP53	0.0-0.2	0.0-0.15	10/03/2016		FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel, trace root fibres	
	0.2-0.4	0.25-0.35			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP54	0.0-0.15	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP55	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP56	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP57	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP58	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP59	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP60	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP61	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(ML) Clayey SILT, low plasticity, brown	
TP62	0.0-0.3	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP63	0.0-0.3	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP64	0.0-0.3	0.0-0.15	10/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP65	0.0-0.2	0.0-0.15	10/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CH) Silty CLAY, high plasticity, grey mottled red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP66	0.0-0.3	0.0-0.15	10/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with brick and gravel	Inclusion of plastics
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP67	0.0-0.2	0.0-0.15	10/03/2016		FILL: Silty Clay, medium plasticity, brown, with brick and concrete pieces, with root fibres	
	0.2-1.0	0.5-0.8			FILL: Silty Clay, medium plasticity, brown, with brick and concrete pieces	
	1.0-1.3	1.05-1.15			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP68	0-0.2	0-0.15	11/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.4	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown, with fine grained gravel	
TP69	0-0.3	0-0.15	11/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP70	0-0.2	0-0.15	11/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP71	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP72	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP73	0-0.3	0-0.15	11/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP74	0-0.3	0-0.15	11/03/2016		FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel, trace boulders, trace root fibres	Inclusion of brick pieces, metal pieces observed
	0.3-0.6	0.5-0.6			FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel, trace boulders	
	0.6-0.9	0.65-0.75			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP75	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, yellow-brown	
TP76	0-0.2	0-0.15	11/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP77	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, yellow-brown	
TP78	0-0.15	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP79	0-0.2	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP80	0-0.2	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP81	0-0.2	0-0.15	11/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	0.2-0.4	0.25-0.35			(CH) Silty CLAY, high plasticity, grey mottled red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP82	0-0.2	0-0.15	11/03/2016		FILL: Silty Clay, medium plasticity, brown, with brick and concrete fragments, with root fibres	
	0.2-0.6	0.25-0.35			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP83	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP84	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP85	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP86	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP87	0-0.2	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP88	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP89	0-0.2	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP90	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, yellow-brown	
TP91	0-0.2	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP92	0-0.3	0-0.15	11/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH), Silty CLAY, medium to high plasticity, red mottled grey	
TP93	0.0-0.3	0.0-0.15	15/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	
	0.3-0.8	0.35-0.45			(CH) Silty CLAY, high plasticity, grey mottled red, with fine to coarse grained gravel	
TP94	0.0-0.4	0.0-0.15	15/03/2016		(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey, with root fibres	
	0.4-0.8	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP95	0.0-0.3	0.0-0.15	15/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	
	0.3-0.8	0.5-0.8			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	0.8-1.0	0.85-0.95			(CH) Silty CLAY, high plasticity, grey mottled red	
TP96	0.0-0.15	0.0-0.15	15/03/2016		(CH) Silty CLAY, high plasticity, grey mottled red, with root fibres	
	0.15-0.8	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP97	0.0-0.4	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.4-0.8	NS			(CH) Silty CLAY, high plasticity, grey mottled red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP98	0.0-0.15	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP99	0.0-0.15	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CH) Silty CLAY, high plasticity, grey mottled red, with fine to coarse grained ironstone gravel	
	0.5				TP99 terminated at 0.5 due to refusal	
TP100	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
	0.6-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP101	0.0-0.15	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP102	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP103	0.0-0.2	0.0-0.15	15/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP104	0.0-0.2	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP105	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP106	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP107	0.0-0.4	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.4-0.7	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP108	0.0-0.15	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP109	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP110	0.0-0.2	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP111	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP112	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP113	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP114	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP115	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP116	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP117	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP118	0.0-0.3	0.0-0.15	15/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP119	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP120	0.0-0.15	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low plasticity, brown, with root fibres	
	0.15-0.5	NS			(CH) Silty CLAY, high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP121	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP122	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP123	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP124	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low plasticity, brown, with root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP125	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP126	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP127	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP128	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP129	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP130	0.0-0.15	0.0-0.15	17/03/2016		(CH) Silty CLAY, high plasticity, grey mottled red, with root fibres	
	0.15-0.5	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP131	0.0-0.3	0.0-0.15	17/03/2016		(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown, with root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP132	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP133	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.4	NS			(ML) Clayey SILT, low plasticity, brown	
TP134	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP135	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP136	0.0-0.4	0.0-0.15	22/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP137	0.0-0.3	0.0-0.15	22/03/2016		FILL: Silty Clay, medium plasticity, brown, with concrete gravel and root fibres	
	0.3-0.6	0.35-0.45			(CH) Silty CLAY, high plasticity, red mottled grey	
TP138	0.0-0.3	0.0-0.15	22/03/2016		(CH) Gravelly CLAY, high plasticity, red, trace root fibres	
TP139	0.0-0.3	0.0-0.15	22/03/2016		(CH) Gravelly CLAY, high plasticity, red, trace root fibres	
TP140	0.0-0.2	0.0-0.15	22/03/2016		FILL: Silty Clay, medium plasticity, brown, with fine grained gravel and root fibres	
	0.2-0.8	0.5-0.8			FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel	
	0.8-1.2	0.85-0.95			(ML) Clayey SILT, low plasticity, brown	
TP141	0.0-0.2	0.0-0.15	22/03/2016		FILL: Silty Clay, medium plasticity, brown, with demolition waste and root fibres	
	0.2-0.6	0.5-0.6			FILL: Silty Clay, medium plasticity, brown, with demolition waste	
	0.6-0.8	0.65-0.75			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP142	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low plasticity, brown, with root fibres	
	0.2-0.6	NS			(CH) Silty CLAY, high plasticity, red mottled grey	
TP143	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CH) Silty CLAY, high plasticity, grey mottled red	
TP144	0.0-0.2	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP145	0.0-0.3	0.0-0.15	17/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP146	0.0-0.3	0.0-0.15	23/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP147	0.0-0.3	0.0-0.15	23/03/2016		FILL: Gravelly (roadbase) Clay, low to medium plasticity, brown	
	0.3-0.8	0.35-0.45			(CH) CLAY, high plasticity, orange-red	
TP148	0.0-0.3	0.0-0.15	23/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP149	0.0-0.4	0.0-0.15	23/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.4-0.9	NS			(CH) CLAY, high plasticity, orange-red	
TP150	0.0-0.3	0.0-0.15	23/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.7	NS			(CH) CLAY, high plasticity, orange-red	
TP151	0.0-0.4	0.0-0.15	23/03/2016		FILL: Gravelly (roadbase) Clay, low to medium plasticity, brown	
	0.4-0.9	0.45-0.55			(CH) CLAY, high plasticity, orange-red	
TP152	0.0-0.9	0.0-0.15 0.5-0.8	23/03/2016		FILL: Silty Sand, fine grained, brown, inclusion of ironstone	
	0.9-1.4	0.95-1.05			(CH) CLAY, high plasticity, orange-red	
TP153	0.0-0.2	0.0-0.15	23/03/2016		FILL: Gravelly (roadbase) Clay, low to medium plasticity, brown	
	0.2-0.7	0.25-0.35			(CH) CLAY, high plasticity, orange-red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP154	0.0-2.0	0.0-0.15 0.5-0.8 1.0-1.3 1.3-1.8	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel, inclusion large rocks and bricks	
	2.0				TP154 terminated at 2.0m due to limit of reach	
TP155	0.0-1.8	0.0-0.15 0.5-0.8 1.0-1.3 1.5-1.8	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel, inclusion bricks, boulders and concrete	
	1.8-2.0	1.85-1.95			(CH) CLAY, high plasticity, orange-red	
	2.0				TP155 terminated at 2.0m due to limit of reach	
TP156	0.0-0.5	0.0-0.15	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel	
	0.5				TP156 terminated at 0.5m due to refusal	
TP157	0.0-0.3	0.0-0.15	23/03/2016		FILL: Silty Sand, fine grained, brown, inclusion of ironstone	
	0.3-0.9	0.5-0.8			FILL: Clay, medium to high plasticity, grey-dark brown, inclusion of ironstone gravel	
	0.9				TP157 terminated at 0.9m due to refusal on concrete	
TP158	0.0-0.2	0.0-0.15	24/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with root fibres	
	0.2-1.0	0.5-0.8			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	1.0-1.5	1.05-1.15			(CH) Silty CLAY, high plasticity, yellow-brown	
TP159	0.0-0.9	0.0-0.15 0.5-0.8	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel, inclusion of cobbles and boulders	
	0.9				TP159 terminated at 0.9m due to refusal	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP160	0.0-0.3	0.0-0.15	24/03/2016		FILL: Demolition waste, with Silty Clay, medium plasticity, brown, with root fibres	
	0.3-1.8	0.5-0.8 1.0-1.3 1.5-1.8			FILL: Demolition waste, with Silty Clay, medium plasticity, brown	
	1.8-1.9	NS			(CH) Silty CLAY, high plasticity, red mottled grey	
	1.9				TP160 terminated at 1.9m due to collapse of test pit walls	
TP161	0.0-1.0	0.0-0.15 0.5-0.8	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel	
	1.0-1.5	1.0-1.3			FILL: Clay, high plasticity, red-orange, inclusion of gravel and ironstone	
	1.5-2.0	1.55-1.65			(CH) Shaley CLAY, high plasticity, grey	
TP162	0.0-1.5	0.0-0.15 0.5-0.8 1.0-1.3	23/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel	
	1.5-2.0	1.55-1.65			(CH) CLAY, high plasticity, orange-red	
TP163	0.0-0.3	0.0-0.15	24/03/2016		FILL: Silty Clay, medium plasticity, brown, with demolition waste (including concrete, bricks and tiles), with root fibres	
	0.3-1.5	0.5-0.8 1.0-1.3			FILL: Silty Clay, medium plasticity, brown, with demolition waste (including concrete, bricks and tiles)	
	1.5-1.7	1.55-1.65			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP164	0.0-0.2	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, low plasticity, brown, with root fibres	
	0.2-0.6	NS			(CH) Silty CLAY, high plasticity, red	
TP165	0.0-0.3	0.0-0.15	24/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel and root fibres	
	0.3-0.7	0.5-0.7			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	0.7-0.9	0.75-0.85			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP166	0.0-0.2	0.0-0.15	24/03/2016		FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	Bricks and plastics observed at 2.6m.
	0.2-2.6	0.5-0.8 1.0-1.3 1.5-1.8 2.0-2.3 2.5-2.6			FILL: Silty Clay, medium to high plasticity, grey-brown, with fine to coarse grained gravel	
	2.6				TP166 terminated at 2.6m due to limit of reach	
TP167	0.0-0.8	0.0-0.15 0.5-0.8	24/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	0.8-1.3	1.0-1.3			FILL: Silty Clay, high plasticity, red-brown, with fine to coarse grained gravel	
	1.3-2.3	1.5-1.8 2.0-2.3			FILL: Silty Clay, high plasticity, red-brown, with fine to coarse grained gravel, with glass and wood pieces and fibro-cement pieces	
	2.3				TP167 terminated at 2.3m	
TP168	0.0-0.2	0.0-0.15	24/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel and root fibres	Water encountered at 1.2m
	0.2-1.2	0.5-0.8 1.0-1.2			FILL: Silty Clay, high plasticity, grey-brown, with scrap metal, wood, demolition waste, glass, general waste and fibro-cement pieces	
	1.2				TP168 terminated at 1.2m due to difficulty of excavation in fill and water	
TP169	0.0-0.2	0.0-0.15	18/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(ML) Clayey SILT, low plasticity, brown	
TP170	0.0-0.2	0.0-0.15	18/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP171	0.0-0.15	0.0-0.15	18/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	
	0.15-0.5	NS			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	0.5-0.8	0.55-0.65			(CH) Silty CLAY, high plasticity, red mottled grey	
TP172	0.0-0.2	0.0-0.15	18/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	
	0.2-1.3	0.5-0.8 1.0-1.3			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	1.3-1.5	1.35-1.45			(CH) Silty CLAY, high plasticity, grey mottled red, with fine grained ironstone gravel	
TP173	0.0-0.2	0-0.15	18/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel, with root fibres	
	0.2-1.0	0.5-0.8			FILL: Silty Clay, high plasticity, grey-brown, with fine to coarse grained gravel	
	1.0-1.2	1.05-1.15			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP174	0.0-0.2	0.0-0.15	18/03/2016		FILL: Silty Clay, high plasticity, grey-brown, with root fibres and fine grained gravel	Rusted metal piece observed
	0.2-1.0	0.5-0.8			FILL: Silty Clay, high plasticity, grey-brown, with fine grained gravel	
	1.0				TP174 terminated at 1.0 due to refusal on fill	
TP175	0.0-0.2	0.0-0.15	22/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP176	0.0-0.15	0.0-0.15	22/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.5	NS			(CH) Silty CLAY, high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP177	0.0-0.3	0.0-0.15	22/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP178	0.0-0.5	0.0-0.15	22/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.5-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP179	0.0-0.3	0.0-0.15	18/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP180	0.0-0.15	0.0-0.15	22/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP181	0.0-0.4	0.0-0.15	22/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with root fibres and fine to coarse grained gravel	
	0.4-0.7	0.45-0.55			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP182	0.0-0.2	0.0-0.15	22/03/2016		FILL: Silty Clay, medium plasticity, brown, with root fibres and fine to coarse grained gravel	Bricks observed
	0.2-1.0	0.5-0.8			FILL: Silty Clay, medium plasticity, brown, with gravel and demolition waste	
	1.0-1.2	1.05-1.15			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP183	0.0-0.2	0.0-0.15	22/03/2016		FILL: Silty Clay, medium plasticity, brown, with gravel and root fibres	Bitumen and bricks observed
	0.2-1.2	0.5-0.8 1.0-1.2			FILL: Silty Clay, medium plasticity, brown, with gravel	
	1.2-1.5	1.25-1.35			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
TP184	0.0-0.2	0.0-0.15	18/03/2016		FILL: Silty Clay, medium plasticity, brown, with coarse grained gravel and root fibres	
	0.2-1.5	0.5-0.8 1.0-1.3			FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel, wooden posts, metal pipes and demolition waste	
	1.5				TP184 terminated at 1.5m due to refusal on fill	
TP185	0.0-0.3	0.0-0.15	22/03/2016		(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown, with root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP186	0.0-0.3	0.0-0.15	22/03/2016		(CH) Gravelly CLAY, high plasticity, red, trace root fibres	
TP187	0.0-0.1	0.0-0.1	22/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.1-0.5	NS			(CH) Silty CLAY, high plasticity, red mottled grey, with fine grained ironstone gravel	
TP188	0.0-0.4	0.0-0.15	22/03/2016		(CH) Silty CLAY, high plasticity, red, with ironstone gravel	
TP189	0.0-0.4	0.0-0.15	22/03/2016		(CH) Silty CLAY, high plasticity, red, with ironstone gravel	
TP190	0.0-0.4	0.0-0.15	22/03/2016		(CH) Gravelly CLAY, high plasticity, red, trace root fibres	
TP191	0.0-0.15	0.0-0.15	22/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.15-0.6	NS			(CH) Gravelly CLAY, high plasticity, red mottled grey	
TP192	0.0-0.2	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.2-0.7	NS			(CH) CLAY, high plasticity, orange-red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP193	0.0-0.2	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.2-0.7	NS			(CH) CLAY, high plasticity, orange-red	
TP194	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP195	0.0-0.8	0.0-0.15 0.5-0.8	24/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel, inclusion of cobbles, boulders and concrete	
	0.8-1.3	NS			(CH) CLAY, high plasticity, orange-red	
TP196	0.0-0.2	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.2-0.7	NS			(CH) CLAY, high plasticity, orange-red	
TP197	0.0-0.2	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.2-0.7	NS			(CH) CLAY, high plasticity, orange-red	
TP198	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP199	0.0-0.1	0.0-0.1	24/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel	
	0.1-0.4	0.15-0.25			TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.4-0.6	NS			(CH) CLAY, high plasticity, orange-red	
TP200	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP201	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP202	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP203	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP204	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP205	0.0-0.9	0.0-0.15 0.5-0.8	24/03/2016		FILL: Gravelly (roadbase) Clay, low to medium plasticity, brown, inclusion of coal	
	0.9-1.4	0.95-1.05			(CH) CLAY, high plasticity, orange-red	
TP206	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP207	0.0-0.4	0.0-0.15	24/03/2016		FILL: Silty Clay, medium plasticity, brown, inclusion of gravel	
	0.4-0.9	0.45-0.55			(CH) CLAY, high plasticity, orange-red	
TP208	0.0-0.3	0.0-0.15	24/03/2016		TOPSOIL: Silty Clay, medium plasticity, brown, inclusion of root fibres	
	0.3-0.8	NS			(CH) CLAY, high plasticity, orange-red	
TP209	0.0-0.3	0.0-0.15	29/03/2016		FILL: Silty Clay, medium plasticity, brown, with brick fragments and root fibres	Metal bolt observed
	0.3-0.7	0.35-0.45			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
	0.7				TP209 terminated at 0.7m due to refusal	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP210	0.0-0.4	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.8	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP211	0.0-0.4	0.0-0.15	29/03/2016		FILL: Silty Clay, medium plasticity, brown, with brick fragments and root fibres	
	0.4-0.7	0.45-0.55			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP212	0.0-0.15	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP216	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP217	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP218	0.0-0.1	0.0-0.1	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.1-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP219	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP220	0.0-0.3	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP221	0.0-0.3	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3				TP221 terminated at 0.3m due to refusal	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP222	0.0-0.4	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP223	0.0-0.3	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP224	0.0-0.3	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP225	0.0-0.5	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.5-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP226	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP227	0.0-0.4	0.0-0.15	30/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.4-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, yellow-brown	
TP228	0.0-0.1	0.0-0.1	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.1-0.4	NS			(CI-CH) Silty CLAY, medium to high plasticity, brown	
TP229	0.0-0.3	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP230	0.0-0.4	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP231	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown	
TP232	0.0-0.2	0.0-0.15	30/03/2016		FILL: Silty Clay, medium plasticity, brown, with demolition waste, gravel and root fibres	
	0.2-1.2	0.5-0.8 1.0-1.2			FILL: Silty Clay, medium plasticity, brown, with demolition waste, gravel	
	1.2-1.4	1.25-1.35			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP233	0.0-0.5	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.5-0.7	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP234	0.0-0.1	0.0-0.1	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.1-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP235	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP236	0.0-0.4	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.4-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
TP237	0.0-0.5	0.0-0.15	29/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.5				TP237 terminated at 0.5m due to refusal	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP238	0.0-0.2	0.0-0.15	30/03/2016		(CL) Silty CLAY, low plasticity, brown	
	0.2-0.5	NS			(CI) Silty CLAY, medium plasticity, brown mottled grey	
TP239	0.0-0.2	0.0-0.15	30/03/2016		(CL) Silty CLAY, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CH) Silty CLAY, high plasticity, red mottled grey	
TP240	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(ML) Clayey SILT, low plasticity, brown	
TP241	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, brown	
TP242	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CI-CH) Silty CLAY, medium to high plasticity, brown	
TP243	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.6	NS			(SM) Silty SAND, fine grained, brown	
TP244	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(SM) Silty SAND, fine grained, brown	
TP245	0.0-0.15	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.5	NS			(SM) Silty SAND, fine grained, brown	
TP246	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(ML) Clayey SILT, low plasticity, brown	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

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TP247	0.0-0.1	0.0-0.1	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.1-0.5	NS			(CI) Silty CLAY, medium plasticity, yellow-brown mottled grey	
TP248	0.0-0.2	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.2-0.5	NS			(CL-CI) Silty CLAY, low to medium plasticity, brown mottled grey	
TP249	0.0-0.15	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.15-0.3	NS			(ML) Clayey SILT, low plasticity, brown	
TP250	0.0-0.3	0.0-0.15	30/03/2016		TOPSOIL: Clayey Silt, low plasticity, brown, trace root fibres	
	0.3-0.6	NS			(CI-CH) Silty CLAY, medium to high plasticity, red-brown	
SP1-1	0.0-0.3	0.0-0.15	09/03/2016		FILL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-1.0	0.5-0.8			FILL: Silty Clay, low to medium plasticity, brown	
	1.0-1.3	1.05-1.15			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
SP1-2	0.0-0.3	0.0-0.15	09/03/2016		FILL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-1.0	0.5-0.8			FILL: Silty Clay, low to medium plasticity, brown	
	1.0-1.3	1.05-1.15			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
SP1-3	0.0-0.3	0.0-0.15	09/03/2016		FILL: Silty Clay, low to medium plasticity, brown, trace root fibres	
	0.3-1.0	0.5-0.8			FILL: Silty Clay, low to medium plasticity, brown	
	1.0-1.3	1.05-1.5			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

Project	Proposed Clydesdale Park Estate	Job No	13552/1
Location	Lot 2 in DP260476, Richmond Road, Marsden Park	Refer to Drawing No	13552/1-AA1
		Logged & Sampled by	SS

TABLE 1

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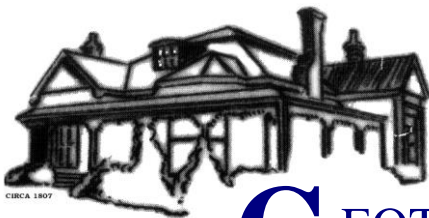
Test Pit	Depth (m)	Sample Depth (m)	Date	Time	Material Description	Remarks*
SP2-1	0.0-0.3	0.0-0.15	17/03/2016		FILL: Silty Clay, low to medium plasticity, brown, with root fibres and gravel	Fill is composed of demolition waste
	0.3-1.6	0.5-0.8 1.0-1.3 1.5-1.6			FILL: Silty Sand, fine to coarse grained, grey, with concrete gravel, cobbles and boulders, with brick pieces	Metal pieces and plastics can also be observed
	1.6				SP2-1 terminated at 1.6m due to refusal on demolition waste	
SP2-2	0.0-0.15	0.0-0.15	17/03/2016		FILL: Silty Sand, fine to coarse grained, grey, with concrete gravel, cobbles and boulders, with brick pieces, with root fibres	Fill is composed of demolition waste
	0.15-1.8	0.5-0.8 1.0-1.3 1.5-1.8			FILL: Silty Sand, fine to coarse grained, grey, with concrete gravel, cobbles and boulders, with brick pieces	Wire, plastics and metal pieces are also observed
	1.8				SP2-2 terminated at 1.8m due to refusal on fill	
SP3-1	0.0-0.15	0.0-0.15	17/03/2016		FILL: Silty Sand, fine to coarse grained, grey, with root fibres, with gravel, concrete and bitumen	
	0.15-0.7	0.5-0.7			FILL: Silty Sand, fine to coarse grained, grey, with gravel, concrete and bitumen	
	0.7-0.9	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
SP3-2	0.0-0.15	0.0-0.15	17/03/2016		FILL: Silty Sand, fine to coarse grained, grey, with root fibres, with gravel, concrete and bitumen	
	0.15-0.9	0.5-0.8			FILL: Silty Sand, fine to coarse grained, grey, with gravel, concrete and bitumen	
	0.9-1.1	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	
SP3-3	0.0-0.15	0.0-0.15	17/03/2016		FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel and concrete pieces, with root fibres	
	0.15-1.0	0.5-0.8			FILL: Silty Clay, medium plasticity, brown, with fine to coarse grained gravel and concrete pieces	
	0.8-1.0	NS			(CI-CH) Silty CLAY, medium to high plasticity, red mottled grey	

NS = No Sample

*Odour (O), Discolouration (D), Petroleum Hydrocarbon Staining (PHS), Asbestos Containing Material (ACM), Ash Material (ASHM), Demolition Waste (DW), Groundwater (GW), Perched Water (PW) PID reading etc.

APPENDIX E

UNEXPECTED FINDS MANAGEMENT PROTOCOL



GEOTECHNIQUE[®]
PTY LTD

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**UNEXPECTED FINDS MANAGEMENT PROTOCOL
PROPOSED RESIDENTIAL SUBDIVISION DEVELOPMENT
LOT 2 IN DP260476
RICHMOND ROAD, MARSDEN PARK**

In the event that unexpected finds and/or suspect materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos sheeting/pieces/pipes, ash material, imported fill, etc.) are encountered during remediation work / future earthworks or in between sampling locations or masked by overgrown bush and/or shrubs, the following actions are to be undertaken.

Management of unexpected finds and/or suspect materials

If unexpected finds and/or suspect materials are encountered:

- Works are to be ceased.
- An Environmental consultant is to be engaged to take appropriate action.
- If contamination is identified, the contaminated materials must be disposed of at an EPA licensed landfill facility with an appropriate waste classification.

Management of bonded asbestos containing material (ACM)

If bonded ACM is encountered, the following measures are implemented:

- Engage a NSW WorkCover accredited Class B asbestos contractor.
- Removal of the asbestos waste must be carried out in accordance with the requirements of the regulators, such as NSW WorkCover and NSW EPA.
- A WorkCover Licensed Asbestos Assessor should be engaged to provide a clearance certificate.

Management of friable asbestos within the soil

It is recommended that the following measures are implemented if friable asbestos is encountered:

- Engage a NSW WorkCover accredited Class A Asbestos contractor.
- Removal of the asbestos waste must be carried out in accordance with the requirements of the regulators, such as NSW WorkCover and NSW EPA
- A WorkCover Licensed Asbestos Assessor must be engaged to provide a clearance certificate.

APPENDIX F

ENVIRONMENTAL NOTES

IMPORTANT INFORMATION REGARDING YOUR ENVIRONMENTAL SITE ASSESSMENT

These notes have been prepared by Geotechnique Pty Ltd, using guidelines prepared by the ASFE (Associated Soil and Foundation Engineers). The notes are offered to assist in the interpretation of your environmental site assessment report.

REASONS FOR AN ENVIRONMENTAL ASSESSMENT

Environmental site assessments are typically, though not exclusively, performed in the following circumstances:

- As a pre-acquisition assessment on behalf of a purchaser or a vendor, when a property is to be sold
- As a pre-development assessment, when a property or area of land is to be redeveloped, or the land use has changed, e.g. from a factory to a residential subdivision
- As a pre-development assessment of greenfield sites, to establish baseline conditions and assess environmental, geological and hydrological constraints to the development of e.g. a landfill
- As an audit of the environmental effects of previous and present site usage

Each circumstance requires a specific approach to assessment of soil and groundwater contamination. In all cases the objective is to identify and if possible quantify the risks that unrecognised contamination poses to the ongoing proposed activity. Such risks may be financial (clean-up costs or limitations in site use) and physical (health risks to site users or the public).

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 might not detect all contamination within a site. Contaminants could be present in areas that were not surveyed or sampled, or migrate to areas that did not show signs of contamination when sampled. Contaminant analysis cannot possibly cover every type of contaminant that may occur; only the most likely contaminants are screened.

AN ENVIRONMENTAL SITE ASSESSMENT REPORT IS BASED ON A UNIQUE SET OF PROJECT SPECIFIC FACTORS

In the following events and in order to avoid cost problems, you should ask your consultant to assess any changes in the conclusion and recommendations made in the assessment:

- When the nature of the proposed development is changed e.g. if a residential development is proposed, rather than a commercial development
- When the size or configuration of the proposed development is altered e.g. if a basement is added
- When the location or orientation of the proposed structure is modified
- When there is a change of land ownership, or
- For application to an adjacent site

ENVIRONMENTAL SITE ASSESSMENT FINDINGS ARE PROFESSIONAL ESTIMATES

Site assessment identifies actual sub-surface conditions only at those points where samples are taken, when they are taken. Data obtained from the sampling and subsequent laboratory analyses are interpreted by geologists, engineers or scientists and opinions are drawn about the overall sub-surface conditions, the nature and extent of contamination, the likely impact on any proposed development and appropriate remediation measures. Actual conditions may differ from those inferred, because no professional, no matter how qualified and no sub-surface 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, however, steps can be taken to help minimise the impact. For this reason site owners should retain the services of their consultants throughout the development stages of the project in order to identify variances, conduct additional tests that may be necessary and to recommend solutions to problems encountered on site.

Soil and groundwater contamination is a field in which legislation and interpretation of legislation by government departments is changing rapidly. Whilst every attempt is made by Geotechnique Pty Ltd to be familiar with current policy, our interpretation of the investigation findings should not be taken to be that of the relevant authority. When approval from a statutory authority is required for a project, approval should be directly sought.

STABILITY OF SUB-SURFACE CONDITIONS

Sub-surface conditions can change by natural processes and site activities. As an environmental site assessment is based on conditions existing at the time of the investigation, project decisions should not be based on environmental site assessment data that may have been affected by time. The consultant should be requested to advise if additional tests are required.

ENVIRONMENTAL SITE ASSESSMENTS ARE PERFORMED FOR SPECIFIC PURPOSES AND CLIENTS

Environmental site assessments are prepared in response to a specific scope of work required to meet the specific needs of specific individuals e.g. an assessment prepared for a consulting civil engineer may not be adequate to a construction contractor or another consulting civil engineer.

An assessment should not be used by other persons for any purpose or by the client for a different purpose. No individual, other than the client, should apply an assessment, even for its intended purpose, without first conferring with the consultant. No person should apply an assessment for any purpose other than that originally contemplated, without first conferring with the consultant.

MISINTERPRETATION OF ENVIRONMENTAL SITE ASSESSMENTS

Costly problems can occur when design professionals develop plans based on misinterpretation of an environmental site assessment. In order to minimise problems, the environmental consultant should be retained to work with appropriate design professionals, to explain relevant findings and to review the adequacy of plans and specifications relative to contamination issues.

LOGS SHOULD NOT BE SEPARATED FROM THE 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 would not be redrawn 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 problem, however, contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. Should this occur, delays and disputes, or unanticipated costs may result.

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 sub-surface 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

An environmental site assessment is based extensively on judgement and opinion; therefore, it is necessarily less exact than other disciplines. This situation has resulted in wholly unwarranted claims being lodged against consultants. In order to aid in prevention of 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 happy to give full and frank answers to any questions you may have.