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GOODMAN GROUP CARTER STREET PRECINCT, HOMEBUSH, NSW

Land Capability Assessment
Our ref: 00037445.01

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Dear Kym

Subject: Carter Street Precinct, Homebush, NSW

1. Introduction

WSP Environment & Energy (WSP) is pleased to provide Goodman Group (Goodman) with this Land Capability Assessment which summarises the scope of additional geotechnical and environmental works that may be required to facilitate the proposed Masterplan for the area (including mixed commercial / industrial and high density residential land use).

Based on information provided in a letter prepared by AT&L Civil Engineers & Project Managers (AT&L) dated 8 February 2013, WSP understand that the proposed Carter Street Precinct, Homebush Masterplan will include the following six stages (see Figure 1 in **Attachment 1**):

Stage 1 (2015 – 2019)

Stage 1 covers an area of approximately 57,100m². Prior to construction for this stage the demolition of approximately 36,700m² of building footprint will be required.

Stage 2 (2020 – 2024)

Stage 2 covers an area of approximately 68,250m². Prior to construction for this stage, the demolition of approximately 7,000m² of building footprint will be required.

Stage 3 (2025 – 2030)

Stage 3 covers an area of approximately 48,750m². Prior to construction for this stage the demolition of approximately 21,150m² of building footprint will be required.

Stage 4 (2031 – 2034)

Stage 4 covers an area of approximately 34,000m². During this stage the existing building fronting onto Hill Road will need to be demolished. This building has a footprint of approximately 47,250m². The demolition of this building during Stage 4 will ensure no building demolition needs to occur during Stages 5 and 6.

Stage 5 (2035 – 2039)

Stage 5 covers an area of approximately 34,300m².

Stage 6 (2040 – 2044)

Stage 6 covers an area of approximately 25,570m².

2. Background

To facilitate this Land Capability Assessment, WSP has been provided with the following geotechnical and environmental reports:

- a. ERM (January 2002) Phase 1 Environmental Site Assessment (Ref: 802027RP1) at 23 Uhrig Road, Lidcombe, NSW
- b. ERM (January 2002) Review of Environmental Reports (Ref: 802027RP2) at 1-15 Carter Street, Lidcombe, NSW
- c. HLA (May 2005) Contamination Overview Report (Ref: 54047201_RPT_4May05.doc) at 29-33 Carter Street, Lidcombe, NSW
- d. RES (June 2005) Phase I & II Environmental Site Investigation (Ref: 5008RP01FINAL) at 15 Carter Street, Homebush, NSW
- e. HLA (2 August 2005) Site Audit Statement and Site Audit Report (Ref: S4044601_SAR_2Aug05) at 15 Carter Street, Homebush, NSW
- f. Douglas Partners (September 2006) Geotechnical Investigation (Ref: 44079) Homebush Corporate Centre, Carter Street, Homebush
- g. WSP (July 2007) Phase 1 and Phase 2 Environmental Assessment (Ref: 6099) at 1 – 13 Carter Street, Homebush Bay, NSW
- h. WSP (December 2007) Additional Investigation Works (Ref: 1-07-110) at 1 -13 Carter Street, Homebush Bay, NSW
- i. WSP (December 2007) Remedial Action Plan (Ref: 1-07-134) at 1 – 13 Carter Street, Homebush Bay, NSW

3. Objective and Scope of Works

The key objectives of the land capability geotechnical and contamination assessment of the Carter St Precinct will be:

- To identify and document existing soil conditions with respect to geotechnical and soil contamination risks from an existing industrial/commercial and future high density urban development perspective;
- To determine the potential for land contamination constraints in the precinct;
- To identify those areas where contamination exists, and to provide strategic advice on remediation approaches for those areas;
- To assess groundwater conditions and provide appropriate reporting and advice on this issue;
- If required, conduct additional investigations to assess identified data gaps;
- To identify for a proposed rezoning to residential, what needs to be addressed to meet the requirements of Government policy pertaining to land contamination, particularly *State Environmental Planning Policy (SEPP) 55 – Remediation of Land*; and
- Preparation of a report detailing the findings of the land capability geotechnical and contamination assessment which will assist in evaluating the feasibility of the development footprint.

To achieve the above objectives, WSP conducted the following scope of works:

- Task 1: Desktop review and walkover survey

Geotechnical

- Confirmation of soil type using available Soil Conservation Service of NSW and Department of National Resources Soil Landscape Mapping for the region. These sources provide an overview of soil erosion hazards, fertility and sedimentation characteristics (see Figures 3A and 3B in **Attachment 1** and **Attachment 5**).
- Review of the available Geological Survey of NSW Mapping Sheets for the Study Area (see Figure 4 in **Attachment 1** and **Attachment 5**).
- Review of topographical maps (see Figure 2 in **Attachment 1** and **Attachment 5**).
- Review of available geotechnical reports (see **Attachment 2** and **Attachment 5**).
- A walkover survey of the Study Area to ground truth the information established in the previous points and aid in the determining drilling locations for a geotechnical land capability assessment (see Section 6 and **Attachment 5**).

Contamination

- Review of available historical aerial photographs. This allows the identification of large scale land use changes and potentially contaminating activities (see **Attachment 2**).
 - Review of the current NSW Environment Protection Authority (EPA) public register for activities that could be potentially contaminating with the Study Area, to ascertain if any changes have occurred in the area since investigations were conducted (see **Attachment 2** and Section 5).
 - Review of title deeds records for major parcels of land that show a change in land use or commercial/industrial activity. This provides ownership and allows the identification of potentially contaminating use (see **Attachment 2**).
 - Review of existing contamination assessment reports to verify that these investigations have adequately characterised contamination issues identified within the Study Area and establish if any data gaps exist (see **Attachment 2** and Section 5).
 - A comprehensive site walkover of the Study Area to assess current land use and to make observations on conditions including identification and of potential Areas that represent data gaps (see Sections 4 and 5).
 - Assess the environmental setting of the site with reference to published maps (see **Attachment 2**).
 - An assessment of waste classification characteristics of the soils (see **Attachment 4** and Section 8).
- Task 2: Conduct any additional intrusive investigation works considered necessary to supplement existing data and achieve the strategic project objectives (see Section 8 and **Attachment 3**).
 - Task 3: Reporting

Geotechnical

- interpretation of results to allow for assessment and development of a geotechnical risk map based on the slope stability assessment, classification according to Australian Standards, bearing capacities and field and laboratory results with regard to future urban and commercial/industrial land use (see Sections 8 and 9).

Contamination

- interpretation of results to allow for conclusions to be drawn on the study area's suitability for proposed land uses in its current state and / recommendations for any remedial works including approximate costs if possible. All recommendations made to meet the requirements of SEPP55 and relevant EPA guidelines (see Sections 7 and 9).
- Task 4: GIS Mapping including figures which show depth to base of fill, top of rock, groundwater level, areas of environmental concern, waste classification and areas of geotechnical concern (see **Attachment 1**).

4. Site Description

The Carter Street Precinct covers a total of 27 hectares which is bounded by Carter Street to the south, Hill Road to the west; the Transpacific Liquid Waste treatment facility to the north and Sydney Olympic Park on the eastern boundary (see Figure 1 in **Attachment 1** for allotment details)

The Study Area predominantly consists currently of industrial and commercial buildings. The area is located in the Auburn Local Council area and is Zoned B7 Business Park.

For the purposes of this assessment, the Carter Street Precinct is defined as:

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I
23 Uhrig Road	Lot 23 in DP225350	0.7 hectares	Report Refs A, F, G, H, I
15 Carter Street	Lot 25 DP225350	6.38 hectares	Report Refs B, D, E
29 – 33 Carter Street	Lot 26, 27, 28 in DP225350 and Lot 2 in DP234801	12.8 hectares	Report Ref C
35 Carter Street	Lot 301 in DP541070	2.61 hectares (calculated)	No reports provided

5. Review of Previous Reports

The findings of the previous environmental reports considered relevant to the scope of works described above are presented in **Attachment 2** and can be summarised as follows:

- A hazardous materials survey needs to be conducted in all existing structures to ensure that such materials are remediated in accordance with current best practice prior to demolition of the buildings.
- ERM (2002) concluded that 23 Uhrig Road was considered to be suitable for ongoing commercial / industrial use. However, it was recommended that limited soil sampling was conducted across the site to assess the presence of uncontrolled fill.
- WSP (2007) conducted limited soil sampling in 23 Uhrig Road and concluded that the site was suitable for residential with gardens and commercial / industrial land use.
- ERM (2002) concluded that 1-15 Carter Street were suitable for commercial / industrial land use but recommended delineation of TPH contamination on the western boundary of 7 Carter Street; and, at depth in the tank pit of 9-13 Carter Street. In addition, a Phase 1 Environmental Audit was recommended on 15 Carter Street.
- HLA (2005) concluded that 29-33 Carter Street was suitable for commercial / industrial land use but recommended that should the site be redeveloped in the future, confirmation of subsurface conditions through intrusive sampling and analysis be undertaken to ensure appropriate management measures are implemented.
- RES (2005) conducted a Phase 1 and Phase 2 Environmental Assessment and concluded that 15 Carter Street was suitable for commercial / industrial land use. WSP has reviewed the results and confirm that the site was also suitable for residential with gardens land use.
- Douglas (2006) noted that DIPNR (2002) Salinity Potential in Western Sydney Map stated that the site has moderate salinity potential, increasing to high potential around creek lines.
- Douglas (2006) concluded that 1-13 Carter Street was generally covered with pavements followed by topsoil/filling and then clay underlain by weathered shale. Low to very low strength rock could be removed by conventional excavators and medium sized dozers. Excavation in higher strength materials will required moderate to heavy ripping, rock breaker attachments and / or rotary rock saw.
- Douglas (2006) encountered groundwater at depths of between 2.6 to 6.0m bgl (or between 6.9 and 11.8m RL) and considered that seepage into basement excavations were likely to be minor and controllable by sump pumping. A drainage system would need to be installed into a permanent basement structure to allow future control of seepage waters. A maximum excavation depth of about 8m was anticipated for the lowest basement level, due to the sloping nature of the site. If excavation is required to a greater depth, it was suggested that additional advice be sought.
- Douglas (2006) also recommended that dilapidation surveys be conducted on adjoining footpaths and pavements prior to commencing work on site (including demolition work).
- WSP (2007) concluded that 1-13 Carter Street was suitable for residential and commercial / industrial (with childcare) land use provided that the WSP (2007) RAP was implemented.
- The WSP RAP required removal of PAH and TPH hotspots at 24 Uhrig Road and the AGST (Above Ground Storage Tank) at 7 Carter Street. In addition, a UST (Underground Storage Tank) was suspected to be present on 9-13 Carter Street but could not be confirmed due to the presence of thick building slabs. Following removal of the concrete slab in this area, a GPR survey to locate the tank was proposed. If a tank is encountered then it is to be removed in accordance with the RAP. Furthermore, if a UST is present then WSP is required to provide the Auditor with a detailed work plan to install and monitor shallow groundwater to determine whether the UST has adversely impacted the shallow aquifer.
- When viewed on 15 April 2013, the NSW EPA register confirmed that there were no CLM Notices or POEO Licences for the site.
- The NSW EPA register confirmed one existing CLM Notice at Sydney Olympic Park (SOPA) for ongoing management of remediated lands at Lot 1 in DP 740600; Lot 1 in DP774130; Lot 27 in DP79359; Lot 101 in DP849975; and Lot102 in DP849975. Details are presented in **Attachment 2**.
- The NSW EPA register confirmed four existing POEO Licences at properties within the vicinity of the site. These included Bronson Jacobs (5 Parkview Drive); Homebush Bay Recycling Centre (3 Burroway Road); SITA Waste Recycling Centre (Hill Road); Transpacific Industries Liquid Waste Treatment Plant (Pondage Link / Hill Road). Details are presented in **Attachment 2**.

Areas of potential environmental concern (AEC) are shown on Figure 9 in **Attachment 1** and can be summarised as follows:

- 7 Carter Street: cradle for former AST (AEC 1); soil stockpile 1 (AEC 2); and, soil stockpile 2 (AEC 3);
- 9-13 Carter Street: suspected former AST (AEC 4);
- 15 Carter Street: former UST (AEC 5); and, former AST (AEC 6);

- 29-33 Carter Street: former UST (AEC 7); garage / maintenance area (AEC 8); and, truck wash (AEC 9); and, sewer pump station (AEC 10).

No geotechnical or contamination information (e.g. borehole and laboratory analysis records) was available for 15, 29-33 and 35 Carter Street and these areas were targeted by WSP to achieve the project objectives. In addition, WSP's site investigation also considered the following:

- If it is possible to install groundwater wells downgradient of the suspected UST at 9-13 Carter Street.
- If historical groundwater wells are present, whether they can be used to determine current water levels and / or quality on site.
- If the stockpiles on 24 Uhrig Road are still present on site or have been removed.
- If any additional potential sources of contamination were introduced to the site since the historical reports were conducted and whether any adverse environmental impacts have occurred.

6. Site Inspection

On 18 March 2013, a site inspection was conducted of readily accessible external communal areas of the site by Graeme Malpass (WSP) who was accompanied by Kym Dracopoulos (Goodman) and Alvan Potocki (Goodman).

The objective of the site inspection was to assess and document current site conditions, review the status and relevance of key findings as documented in previous reports and to identify any additional areas of environmental concern at the site.

The findings of the walkover survey can be summarised as follows:

- 1-5 Carter Street: vacant office with warehouse occupied by Logtek who wash and distribute plastic crates for supermarkets. Land use is predominantly unchanged since WSP (2007). Only one of the two former groundwater wells could be located.
- 7 Carter Street: office and warehouse are vacant but rear yard area is being used by Rand for parking of surplus refrigerated vehicles. AEC 1 to 3 inclusive are still present on site. The former groundwater well on this site has been destroyed.
- 9-13 Carter Street: owned by Ausgrid with no access permitted. AEC 4, if present, is likely to remain beneath the slab at this property. The former groundwater well on this site could not be accessed.
- 15 Carter Street: vacant office / warehouse building in south eastern corner of the property; Rural Fire Service in south western corner of property; Rand Transport (central warehouse and yard) who specialise in refrigerated logistics; Toll (northern warehouse and yard) who specialise in Lego and Clothing Storage. New buildings have been constructed over the former groundwater wells and AEC 5 and AEC 6.
- 29 – 33 Carter Street: The majority of the site is covered by warehousing occupied by Greys Online, Couriers Please and Custom Fleet. Custom Fleet also operate a shaded parking area in the north east sector of the property. A standalone warehouse and yard area was located in the north of the property and is used by Riteways Couriers. AEC 7 to AEC 9 inclusive were no longer visible on site. AEC 10 is still present.
- 35 Carter Street: partially vacant with remainder occupied by a shoe warehouse and office space with yard area.
- WSP were advised by Goodman that no tenancies operate bulk fuel or chemical storage and their agreements specify that they do not cause pollution as a result of their operations.
- No additional significant AEC were identified during the site inspection conducted by WSP.

7. Additional Contamination Investigation

To address the lack of contamination information at 15, 29-33 and 35 Carter Street, WSP conducted the following additional investigation:

- On 26 and 27 March 2013, seventeen boreholes were formed using a Ute Mounted Solid Flight Auger drilling rig in readily accessible communal areas of these properties to depths of between 2 to 8m bgl. The borehole locations are shown on Figure 5 in **Attachment 1**.
- The boreholes were logged in general accordance with USCS and are presented in **Attachment 3**.
- No evidence of asbestos (visual) or contamination (visual / odour) was noted during the drilling and sampling works. An organic odour was noted in natural clayey silt / silty clay soils in BH12 (4.0m bgl) and BH15 (1.3m bgl) and were considered to be indicative of potential acid sulfate soils.

- Soils were screened using a photo ionisation detector (PID). The calibration certificate and results are presented in on borehole logs and in **Attachment 3** respectively.
- Groundwater wells were installed in BH5 (MW07), BH9 (MW08), BH11 (MW09) and BH20 (MW06). The locations are shown on Figure 8 in **Attachment 1** and the installation details are shown on borehole logs presented in **Attachment 3**.
- Soil and groundwater samples were taken by experienced field personnel in accordance with standard procedures and current industry best practice. Samples were sent to accredited laboratories with appropriate chain of custody records. The sample QA/QC was considered appropriate for the purposes of this project.
- Representative soil samples were analysed for M8, TPH, BTEX, PAH, OCP, OPP, total phenols, PCB and asbestos. Two selected samples were submitted for SPOCAS testing to determine acid sulfate soil (ASS) potential. Sample results are presented on Table 1 in **Attachment 3** and can be summarised as follows:
 - M8, OCP, OPP, PCB and total phenols results fall below the NEPM (1999) HIL A guideline for residential with gardens land use.
 - Total PAH and benzo a pyrene (BaP) results fall below the NEPM (1999) HIL A guideline for residential with gardens land use. The only exception is a sample taken from BH09 at 0.20m bgl which falls below NEPM (1999) HIL D guideline for residential with minimal access to soils.
 - TPH and BTEX fall below the NSW EPA (1994) Service Station Guideline for residential and commercial / industrial land uses.
 - For small excavations (<1000 tonnes), the SPOCAS results for BH12 at 4m bgl and BH15 at 1.3m bgl do not exceed the ASSMAC (1998) 0.1% peroxide oxidisable sulfur action criteria and would not require management. However, for larger excavations (>1000 tonnes) the SPOCAS results are borderline and an ASS management plan is likely to be required.
- Table 2 in **Attachment 3** presents the waste classification for the samples. All samples are classified as General Solid Waste (CT1) in accordance with NSW DECC (2009) Waste Classification Guidelines. The only exception being two samples for nickel and one sample for benzo (a) pyrene, which were classed using TCLP results (SCC1)
- Groundwater samples were analysed for M8, TPH, BTEX, PAH, OCP, OPP and PCB. Sample results are presented on Table 3 in **Attachment 3** and can be summarised as follows:
 - M8 were below the adopted ANZECC (2000) Marine Water Quality (95%LoP) guidelines. The only exception being copper, nickel and zinc, which are considered likely to be indicative of background water quality rather than of contamination.
 - TPH, BTEX, OCP, OPP and PCB were below the detection limits of the analysis.
- In summary, the limited information available to date for 15, 29-33 and 35 Carter Street indicates the following:
 - No additional potential areas of environmental concern were identified.
 - The ground conditions are similar to those encountered in previous investigations and consistent with those indicated on available reference materials.
 - These properties are currently suitable for both the current (commercial / industrial) and proposed (mixed residential with limited soil access and commercial) land uses.
 - These properties do not appear to pose a risk to the surrounding environment.
 - The fill materials beneath these properties are classified as General Solid Waste for disposal purposes.

8. Geotechnical Investigation

In conjunction with the Additional Contamination Investigation detailed in Section 8 above, AW Geotechnical Pty Limited (AWG) conducted an Additional Geotechnical Investigation at 15, 29-33 and 35 Carter Street. The findings of these additional works together with the information obtained from available third party reports is presented in their report in **Attachment 5** and summarised as follows for the Carter Street Precinct:

- Comments and Summary
 - The site has varying soil profiles from shallow stable rock, filled ground to over 5 metres deep (suspected backfilled channel), through to deep clay with a moderate to high potential to change volume with changes in soil moisture.

- On the relevant 1:100,000 geological map, the site plots within the Triassic Aged Ashfield Shale which consists of dark laminated shales.

■ Soil Reactivity

- Prior to existing development, and in the absence of trees, the γ_s value according to AS2870-2011 would have been in the range of 20mm to 75mm across the site.
- Because of this high variance, after the site has been cleared of existing structures, further stage specific testing to determine which AS2870-2011 Classification applies to each zone is recommended.

■ Fill

- Where the filled ground is shallower than 1000mm, AWG believe that it is well compacted, and proof rolling according to AS3798-2007 should be sufficient to certify this fill according to AS3798-2007 as Level 1 “controlled” fill.
- Where the fill is deeper than 1000mm, further testing will be required (once the site has been cleared), to determine how to treat the fill.
- The fill encountered in WSP (2013) BH1, BH3, and BH4 appears to indicate a back filled linear feature [WSP note that this may coincide with historical filling shown on Figure 3B in **Attachment 1**]. However, further testing once the site has been cleared will be needed to confirm the nature of this fill.
- The fill encountered in WSP (2013) BH12, BH13 and BH14 appears to indicate a back filled non-linear feature [WSP note that this may coincide with historical filling shown on Figure 3B in **Attachment 1**]. However, further testing once the site has been cleared will be needed to confirm the nature of this fill.
- The locations discussed in the previous two points are shown as areas of geotechnical concern (AGC) on Figure 11 in **Attachment 1** (see AGC 1 and 2 respectively).
- AWG is not convinced that Natural Sand was encountered in the RES (2005) BH14 rather it is considered to be filled ground as per RES (2005) BH9 (see AGC 3 on Figure 11 in **Attachment 1**). Similarly AWG is not confident that refusal on rock occurred in RES (2005) BH14 (see AGC 4 on Figure 11 in **Attachment 1**). After the site is cleared for future development, AGC recommend that this zone needs further onsite geotechnical testing to clarify the soil conditions.

■ For structural footings the following guidelines are necessary:

- The footings must have sufficient stiffness to cope with all predictable ground movements at the time of construction (γ_s plus any movements, which “abnormal moisture conditions”) may generate.
- An allowable bearing pressure of 100kPa may be assumed at all levels into the certified fill and natural undisturbed strata.
- An allowable bearing pressure of 250kPa may be assumed 500mm and deeper into the natural stiff clay based strata.
- An allowable bearing pressure of 3000kPa may be assumed for piers socketed into the “medium” strength rock and 6000kPa is available in the “high” strength rock.

■ AWG was advised that the proposed development would include a 9metre excavation across the site. For any proposed basement excavations the following can be assumed:

- Temporary angles of 45-60° for the soil and between 70-90° for the rock (subject further testing and to geotechnical approval after each lift of 1500mm).
- The following parameters are for the design of retaining structures:

Strata	ϕ	Ko	Ka	Kp
Soil	22°	0.63	0.45	2.20
Rock	35°	0.43	0.27	3.69

- If rock anchors are required, then bond lengths can be determined later, as the underlying bedrock is strong in compression and very weak in tension.
- For adhesion, AWG recommend adopting a value of zero in the soil and 300kPa for the “low to moderate” strength rock and 600kPa for the “high” strength rock.

- With regards to excavatability, AWG note the following:
 - The strata should be rippable by a dog tooth tyne down to the high strength rock, where a rock hammer will be required. NOTE: Further testing including rock coring is required in order to ascertain the excavator size and rock hammer size etc.
 - Figure 7 in **Attachment 1** summarises the depth to this Medium/High Strength interface.
 - High strength rock lenses may also be encountered throughout the soil profile and without further testing it is difficult to delineate these lenses.
- Further specific testing must be completed once a detailed design is complete, however, based on the testing to date the following indicative CBR values are applicable:

Strata	CBR
Existing Fill	2-5%
Re-Compacted Fill	5-10%
Natural Clay	1-3%

- AWG provided the following comments regarding groundwater:
 - No water table was encountered during our testing programme.
 - The absence of a water table does not exclude the possibility that during or after rains, water migrating vertically down through the soil will become trapped where a permeable layer overlies a less permeable layer and then become a “perched water table” and causes seepage into excavations as encountered.
 - Douglas Partners recorded groundwater seepage and recommended the use of pumping from sumps during excavation, which we believe will be applicable for the entire site.
 - To check for a true water table and its fluctuations, a long-term monitoring system needs to be completed in order to provide a more detailed analysis of possible water seepage and water table levels.
- Where features including (but not limited to) paths, landscaping, fencing, etc are supported on soil, but about the part of the structure supported at depth, an unquantifiable potential exists for these features to move as a response to settlement. These junctions need to be carefully detailed and constructed, so as these movements will not result in unsightly damage.

9. Conclusions

The conclusions of this strategic geotechnical and environmental Land Capability Assessment can be summarised as follows:

- Figure 1 in **Attachment 1** summarises the Lot and DP’s for the site and delineates the proposed development stage boundaries discussed in Section 1 above.
- Figure 2 in **Attachment 1** presents the topography of the site. In summary, the site slopes from an elevation of 19.5m AHD in the south east to an elevation of 4m AHD in the north west. The topography in the central portion of the site, occupied by 9 to 15 Carter Street, is controlled by a number of slopes and retaining walls of between 3 and 5m in height. Undercroft car parking is present to the rear of the Rural Fire Service building.
- Figure 3A in **Attachment 1** presents the soil landscape as depicted on the available mapping for the site. The Birrong Fluvial Landscape is present in a former channel running north west to south east through the site. The remainder of the site is underlain by Blacktown Residual Landscape.
- Figure 3B in **Attachment 1** presents the risk categories for Acid Sulfate Soil as depicted on the available mapping for the site. The north western half of the site is underlain by Disturbed Terrain, which is often characterised by filling and ASS investigations are recommended for these areas. The remainder of the site is classed as having no potential ASS risk.
- Figure 4 in **Attachment 1** presents the geology as depicted on the available mapping for the site. The north western quarter of the site is underlain by Quaternary Sediments and then in turn by Ashfield Shale. The remainder of the site is underlain by Ashfield Shale.
- Figure 5 in **Attachment 1** presents the locations of all historical boreholes together with those formed by WSP and discussed in Section 7 above.

- Figure 6 in **Attachment 1** summarises the thickness (m) and depth to base of fill (m AHD) encountered in the boreholes formed at the site to date. Filling thickness in the south eastern third of the site is generally less than 1m (although locally increases to between 1.5 and 2.6m). Filling thickness in the central third of the site is highly variable and ranges from not present to 4.1m in the vicinity of the Disturbed Terrain discussed above. Filling thickness in the north western third of the site is generally less than 1m but does thicken to 2.8m near the north western boundary. This may also be associated with the Disturbed Terrain discussed above.
- Figure 7 in **Attachment 1** summarises the approximate depth to the top of Medium Strength Shale in both mbgl and mAHD. According to AWG, above this depth rock should be able to be excavated / ripped but below this depth rock hammers and sawing are likely to be required. It should be noted that only geotechnical holes have been used as extrapolation of rock strength is not possible from soil descriptions alone.
- Figure 8 in **Attachment 1** presents standing water levels in mbgl and estimated mAHD for discrete sampling events.
- Figure 9 in **Attachment 1** presents Areas of Potential Environmental Concern (AEC) that were identified during the review of historical reports. From a strategic perspective, it appears that the AEC have been appropriately targeted. Please note that the detailed environmental testing results have not been presented as these soils will be removed during basement excavation (see **Attachments 3 and 4**). During such works, care should be taken in the AEC areas to ensure that they are appropriately delineated and understood prior to off site disposal.
- Figure 10 in **Attachment 1** identifies any areas where fill materials do not meet NSW EPA (2009) Waste Classification Guidelines for General Solid Waste (CT1). Yellow shading denotes metal exceedances of CT1 and therefore currently classify as Restricted Solid Waste (CT2). Available information suggests that this could be reclassified as General Solid Waste with TCLP testing. Pink shading denotes Special Waste (Asbestos) in a borehole and a stockpile. Available results are presented in **Attachments 3 and 4**. During detailed future assessment of waste classification for the site to facilitate basement excavations, it would be prudent to consider whether additional testing could reduce the waste classification of General Solid Waste to Excavated Natural Materials (ENM) using the NSW EPA ENM Exemption. Where suitable, this could result in considerable cost savings. Natural shale is anticipated to be classed as VENM.
- Figure 11 in **Attachment 1** identifies the Areas of Geotechnical Concern (AGC) which are discussed in Section 8 above. Once demolition of existing structures has occurred, further targeted investigation will be required in these areas. In addition, geotechnical investigation will be required across the Precinct as a whole to assist with detailed design (refer to AWG report in **Attachment 5**).

The table overleaf summarises the key findings for each of the proposed redevelopment stages listed in Section 1 of this report:

Consideration	Stage 1 (2015 – 2019)	Stage 2 (2020 – 2024)	Stage 3 (2025 – 2030)	Stage 4 (2031 – 2034)	Stage 5 (2035 – 2039)	Stage 6 (2040 – 2044)
Site Area	Approximately 57,100m ²	Approximately 68,250m ²	Approximately 48,750m ²	Approximately 34,000m ²	Approximately 34,300m ²	Approximately 25,570m ²
Current Uses	7 Carter Street – Rand Parking 9-13 Carter - Ausgrid 15 Carter Street – Rural Fire Service, Rand Transport and Toll	1-5 Carter Street – Logtek 7 Carter Street – Rand Parking 29-33 Carter Street – Greys Online, Custom Fleet and Riteways Couriers 35 Carter Street – shoe warehousing	15 Carter Street – Rural Fire Service, Rand Transport and Toll	1-5 Carter Street – Logtek 29-33 Carter Street – Custom Fleet and Riteways Couriers	15 Carter Street – Rand Transport 29-33 Carter Street – Custom Fleet and Riteways Couriers	29-33 Carter Street – Greys Online and Custom Fleet 35 Carter Street – shoe warehousing
Current Site Suitability (commercial / industrial land use)	Suitable with exception of: - Hydrocarbons in BH24-8 (7 Carter Street) - Asbestos in stockpile SP1 (7 Carter Street) – currently grassed (AEC2). - Asbestos in Fill at BH24-11 (7 Carter Street)	Suitable	Suitable	Suitable	Suitable	Suitable
Hazardous Building Materials Survey	Required prior to demolition	Required prior to demolition	Required prior to demolition	Required prior to demolition	Not required – no buildings	Not required – no buildings
Building Demolition	Approximately 36,700m ²	Approximately 7,000m ²	Approximately 21,150m ²	Approximately 47,250m ²	Not required	Not required
Proposed Site Suitability (mixed commercial and residential with minimal access to soil)	Suitable with exception of: - Hydrocarbons in BH24-8 (7 Carter Street) - Asbestos in stockpile SP1 (7 Carter Street) – AEC2 - Asbestos in Fill at BH24-11 (7 Carter Street) - Any additional contamination associated with AEC3 and AEC6 - Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.	Suitable with exception of: - Any additional contamination associated with AEC1, AEC4, AEC9 and AEC10 - Site Auditor required groundwater monitoring plan for AEC4 (if present) - Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.	Suitable with exception of: - Any additional contamination associated with AEC6 - Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.	Suitable with exception of: - Any additional contamination associated with AEC7 and AEC8 - Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.	Suitable with exception of: Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.	Suitable with exception of: Landscaping areas may require imported capping due to local NEPM (1999) PIL exceedances.

[illegible]

We trust that the foregoing meets with your immediate requirements. However, if you have any queries or wish to discuss any points in greater detail please do not hesitate to contact us.

Yours sincerely

Graeme Malpass
Principal Environmental Scientist

Peter Moore
Principal Environmental Engineer

Attachment 1: Figures 1 to 11 inclusive
Attachment 2: Summary of Historical Reports
Attachment 3: Additional Contamination Investigation
Attachment 4: Waste Classification Summary
Attachment 5: Additional Geotechnical Investigation
Attachment 6: Borehole Summary Data (GIS)

Attachment 1: Figures 1 to 11 inclusive



Background Aerial Photograph and Lot Boundaries: SixViewer LPI NSW Government
87445.01 WSP, C.V.G. 9 April 2013

- Legend**
- Site Boundary
 - Stage Boundaries
 - Cadastre Lot Boundaries

Site Administrative Boundaries
Land Capability Assessment
Carter Street Precinct - Homebush, NSW
Figure 1



Background Aerial Photograph: SixViewer LPI NSW Government
Contours: "X_ALS contours labeled"

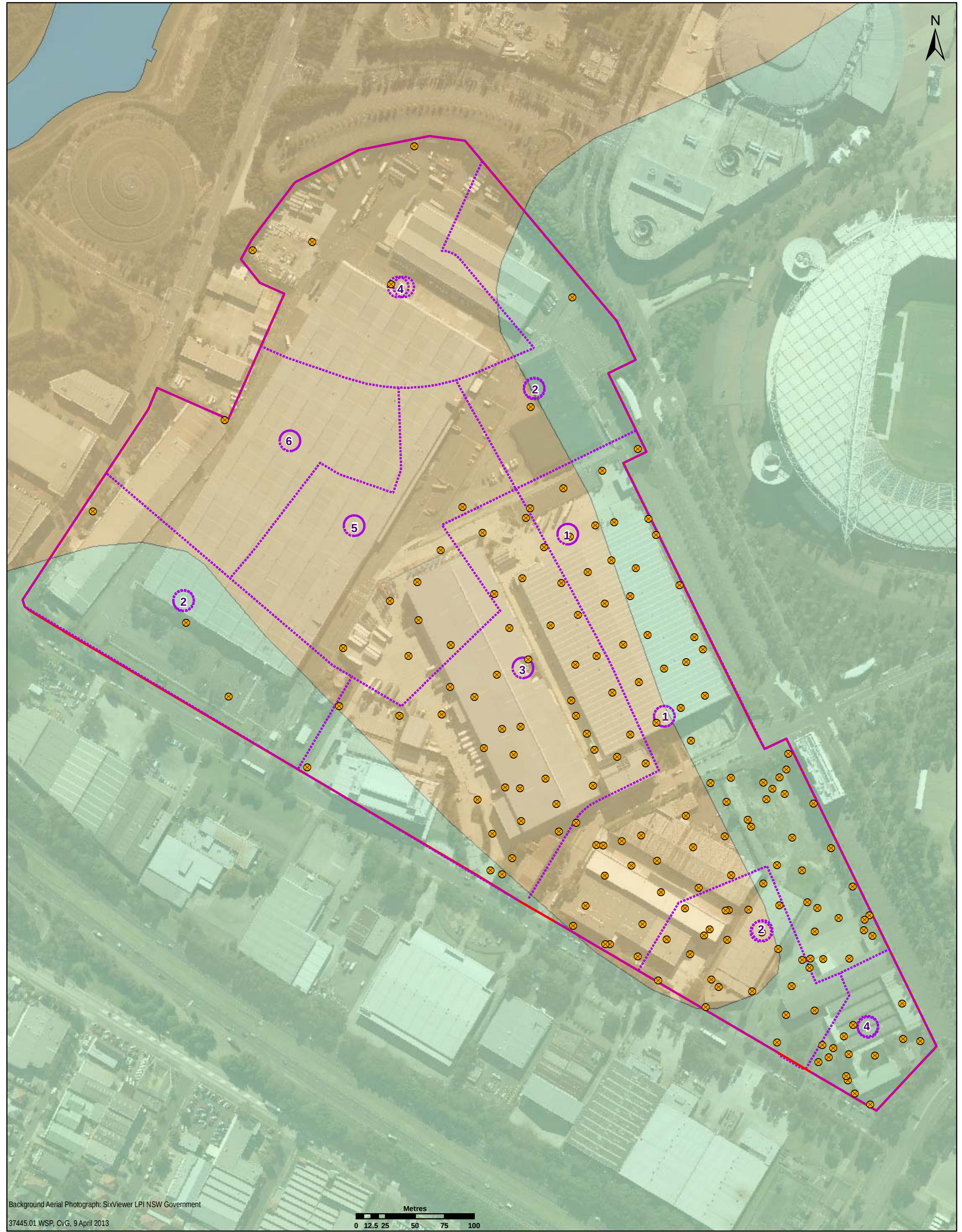
87445.01 WSP, C.V.G, 9 April 2013

- Legend**
- Borehole Locations (current and previous investigations)
 - Site Boundary
 - Stage Boundaries
 - Ground Level Contours (approximate) - every 0.5 metres (m AHD)

Site Topography

Land Capability Assessment
Carter Street Precinct - Homebush, NSW
Figure 2





Background Aerial Photograph: SixViewer LPI NSW Government
37445.01 WSP, CvG, 9 April 2013

Legend

- Borehole Locations
- Site Boundary
- Stage Boundaries

Soil Landscape (DIPNR, Sydney 1:100.000 Sheet 9130, 3rd Edition)

- Birrong Fluvial Landscape.
Level to gently undulating alluvial floodplain
draining Wianamatta Group shales.
Deep (>250cm) Yellow Soils
- Blacktown Residual Landscape
Gently undulating rises on Wianamatta Group shales.
Shallow (<100cm) Red and Brown Soils in well drained areas.
Deep (150-200cm) Yellow Soils in poorly drained areas.

Site Soil Landscape

Land Capability Assessment
Carter Street Precinct - Homebush, NSW
Figure 3A



Background Aerial Photograph: SixViewer LPI NSW Government

37445.01 WSP, C.v.G, 9 April 2013



Legend

- Borehole Locations
- Site Boundary
- Stage Boundaries

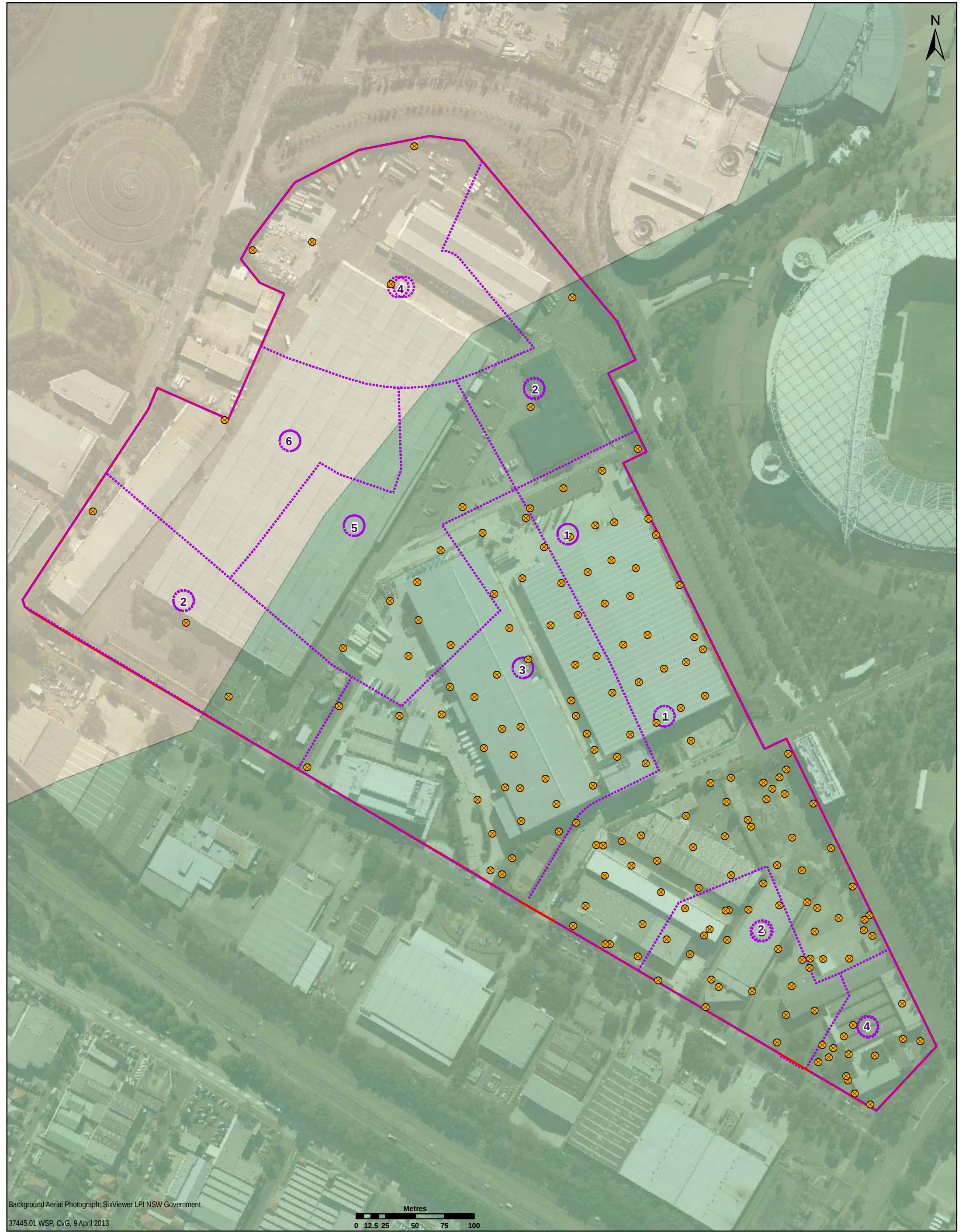
ASS Risk Category (DECC Acid Sulfate Soil Risk data – August 2007)

- | | |
|----------------------------|---|
| High Risk 0-1m | Low Risk 2-4m |
| High Risk 1-2m | Low Risk above 4m |
| High Risk 2-4m | Low Risk Bottom Sediments |
| High Risk above 4m | No Risk |
| High Risk Bottom Sediments | Disturbed Terrain |
| Low Risk 0-1m | Beach |
| Low Risk 1-2m | No Risk (no indication on ASS Risk map) |

Risk Categories for Acid Sulfate Soil (ASS)

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 3B



Background Aerial Photograph: SixViewer LPI NSW Government
37445.01 WSP, CvG, 9 April 2013

Legend

- Borehole Locations
- Site Boundary
- Stage Boundaries

Geological Map (Sydney 1:100.000 Sheet 9130, 1983)

- Ashfield Shale from Wianamatta Group.
Black to dark grey shale and laminate
- Quarternary Sediments. Silty to peaty quartz sand, silt, and clay.
Ferruginous and humic cementation in places. Common shell layers.
Underlain by Ashfield Shale.

Site Geology

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 4



Background Aerial Photograph: SixViewer LPI NSW Government

37445.01 WSP, CVG, 9 April 2013

Metres
0 12.5 25 50 75 100

Legend

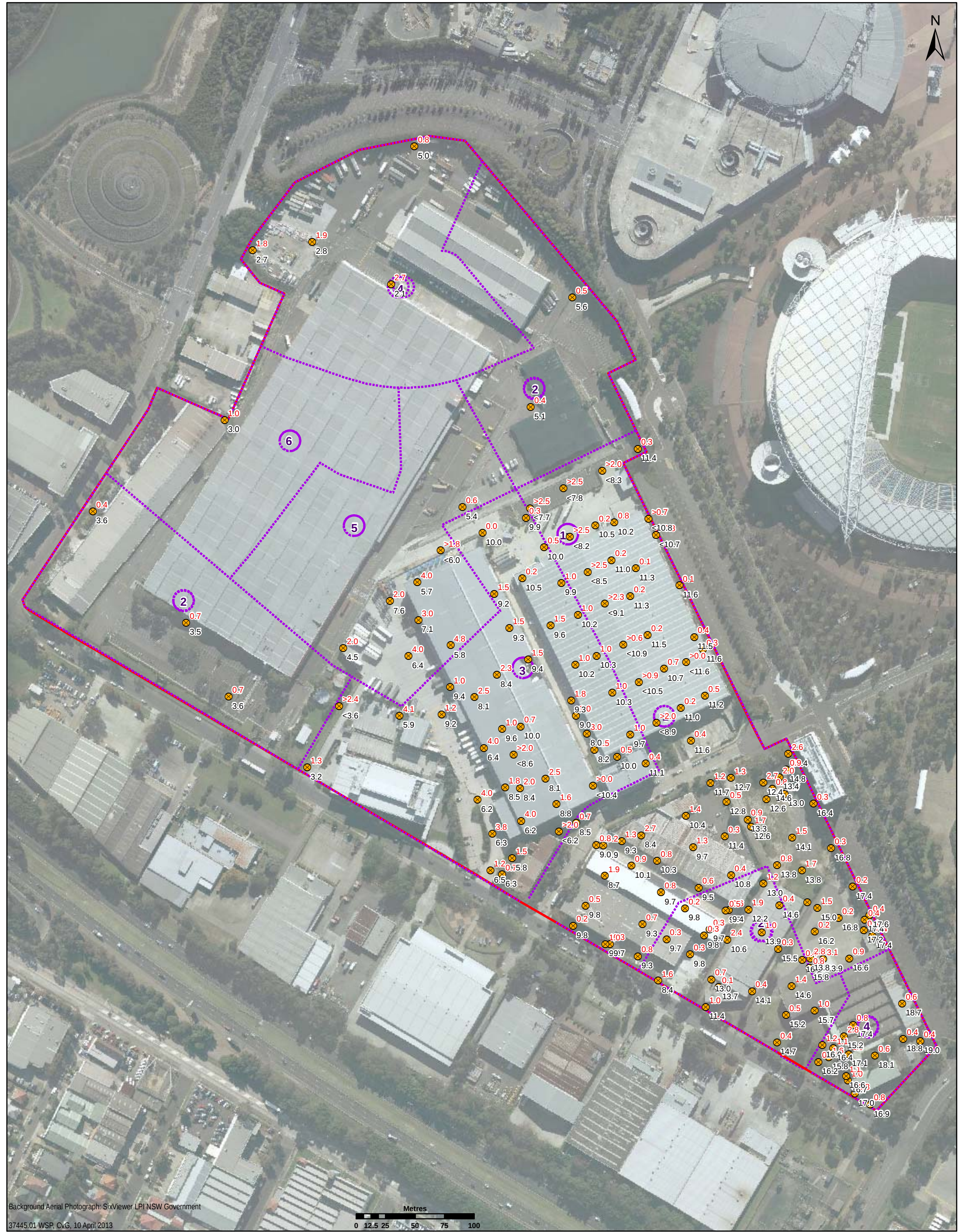
-  Borehole Locations (WSP, 2013)
-  Borehole Locations (previous investigations)
-  Site Boundary
-  Stage Boundaries

Borehole Locations

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 5





Background Aerial Photograph: SixViewer LPI NSW Government

37445.01 WSP, CVG, 10 April 2013



- Legend**
- Site Boundary
 - Stage Boundaries
 - 1.9 Thickness of Fill (m)
 - 8.7 Elevation of Base of Fill (m AHD)

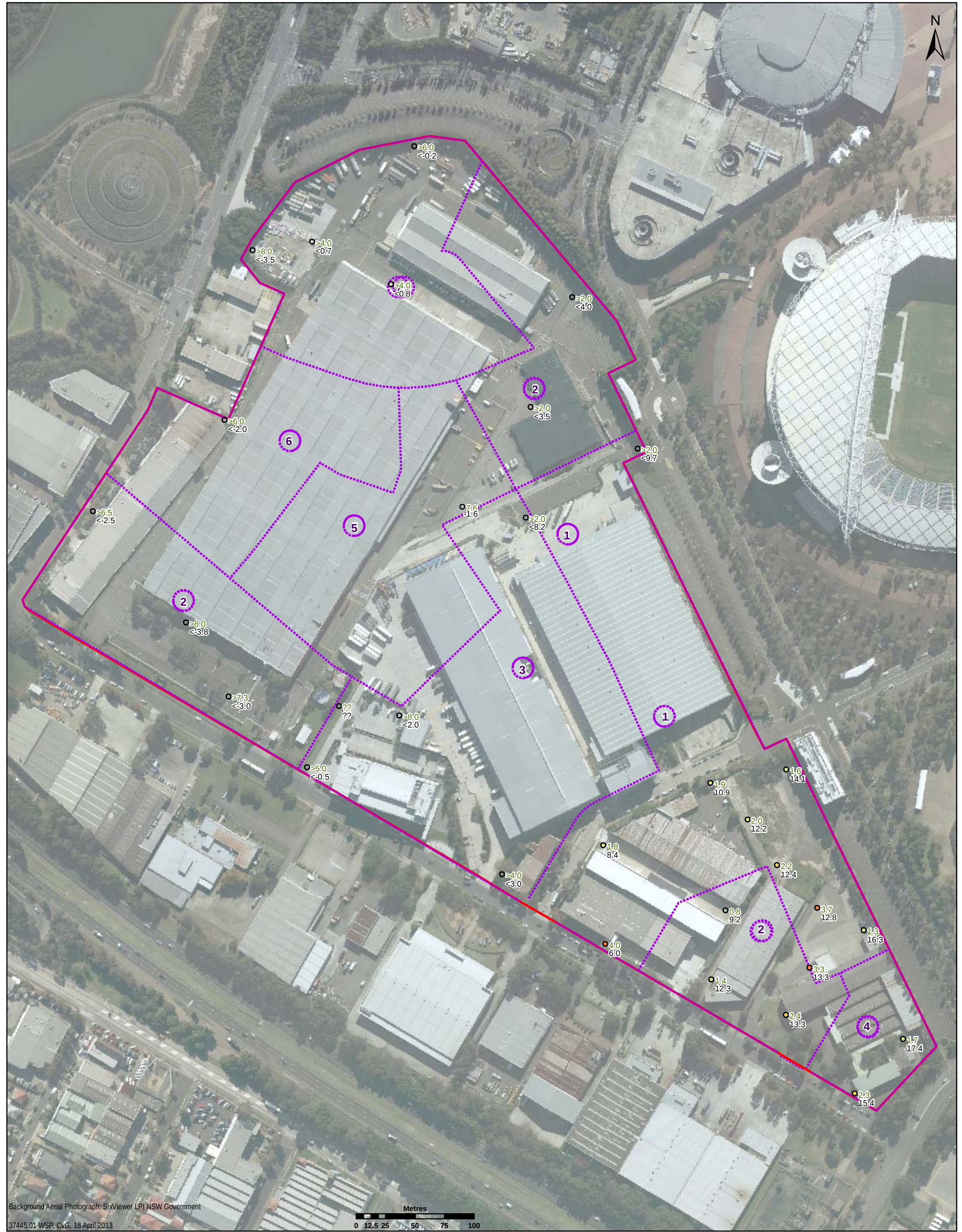
- Fill thickness, including reworked natural (m)
- Unknown
 - < 0.5
 - 0.5 - 1.5
 - 1.5 - 2.5
 - 2.5 - 3.5
 - 3.5 - 5.0

Occurrence of Fill

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 6





Legend

— Site Boundary

- - - Stage Boundaries

● 2.2 Depth to Top of Moderate Strength Rock (mbgl)
8.4 Top of Moderate Strength Rock (mAHD)

Depth to Top of Moderate Strength Rock (mbgl)

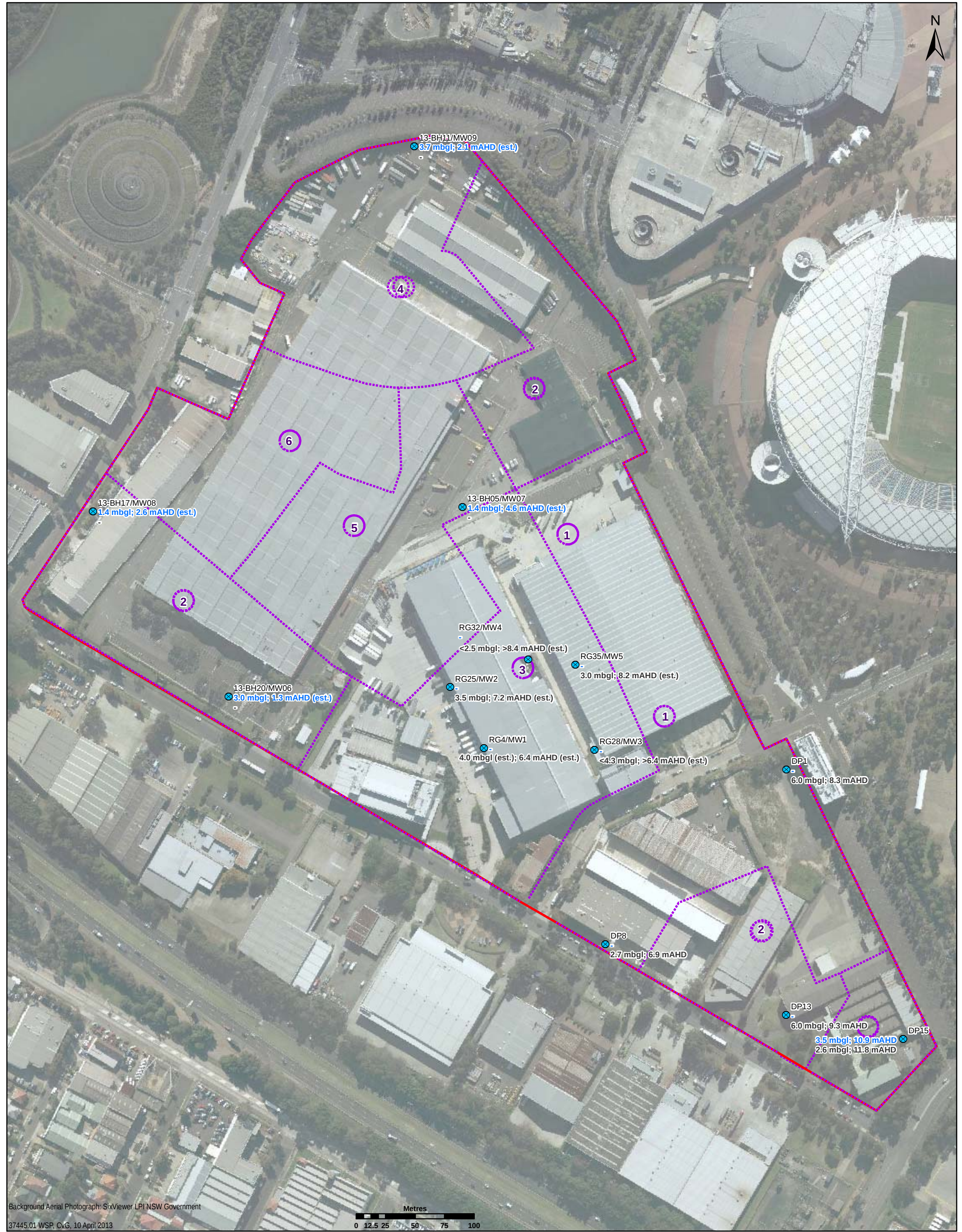
- Unknown
- < 1.0
- 1.0 - 2.0
- 2.0 - 3.0
- 3.0 - 4.0
- 4.0 - 5.0

Depth to Moderate Strength Rock

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 7





Background Aerial Photograph: SixViewer LPI NSW Government

37445.01 WSP, C.V.G, 10 April 2013



Legend

- Groundwater Monitoring Wells
- Site Boundary
- Stage Boundaries

Well Code
SWL, Standing Water Level (3/4/2013)
SWL, Standing Water Level (previous investigations)
Note: Relative Levels (m AHD) were obtained using estimated (est.) ground level from site topography contours, for wells that were not surveyed.

Groundwater Occurrence

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 8







- Legend**
- ✕ Borehole location
 - Site Boundary
 - - - Stage Boundaries
 - ⊗ NSW DECC (2009) Special Waste (Asbestos)
 - ⊗ NSW DECC (2009) Restricted Solid Waste (CT2)

Waste Classification in Fill

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 10





- Legend**
- Borehole location
 - Site Boundary
 - Stage Boundaries
 - AGCs, Areas of Geotechnical Concern

Areas of Geotechnical Concern

Land Capability Assessment
Carter Street Precinct - Homebush, NSW

Figure 11



Attachment 2: Summary of Historical Reports

5.1 ERM (January 2002) Phase 1 Environmental Site Assessment (Document A)

Objectives

- Conduct a phase 1 investigation to establish the current and historical uses at the site and identify potential impacts associated with those past or present land uses; and
- Assess whether the site was suitable for ongoing commercial/industrial use.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
23 Uhrig Road	Lot 23 in DP225350	0.7 hectares	Report Refs A, F, G, H, I

Site History

- The report reviewed six aerial photographs spanning the period from 1951, 1961, 1978, 1986, 1998 and 2000 which can be summarised as follows:
 - 1951: The State Abattoirs including a variety of railway lines and yard
 - 1961: No significant changes noted
 - 1978: The large warehouse had been built on the site (south) and the remaining surface (north) had been sealed with bitumen and appeared to be used as a car park. The land directly east of the site had been cleared and sealed with bitumen and appeared to be used as a car park. North, west and south of the site, large commercial/industrial buildings had been developed.
 - 1986: No significant changes noted
 - 1998: Sale yards and abattoirs had been demolished and the Olympic site was under construction.
 - 2000: No significant changes noted on the site. Olympic Park had been completed, a bus depot / car park was observed further east / north east of the site.
- From the historical information reviewed, the site and surrounding land was used for agricultural purposes from 1810 to 1908. From 1908 until 1970 the proprietors of the site were part of the NSW State Government. The site was leased to various industries, with commercial interests unknown, from 1929 until 1957. From 1970 to the current assessment the site had been leased to various industries. It was assumed that these industries used the site for storage or distribution purposes.
- The site was owned by the State government for approximately 60 years and leased to various unknown industries. Given the history of the Homebush Bay area (the surrounding sites to the north, north east and north west) it is possible that uncontrolled, potentially contaminated fill was deposited on the site, prior to the construction of the site building, which was assumed to be in 1970.

Topography and Environmental Setting

- The average site elevation was approximately 10 m above AHD. The site was essentially level, with a slight slope from the east to the west.
- The site is situated on the boundary of the Birrong and Blacktown soil landscape groups. The limitations of the former soil group are localised flooding, high erosion hazard, saline subsoil, seasonal waterlogging and very low soil fertility. The limitations of the latter soil group are moderately highly plastic subsoil, low fertility and poor soil drainage.
- No known or expected occurrence of acid sulfate soils.
- The site was situated on the Ashfield Shale geological group.
- The nearest surface water body was Haslams Creek located approximately 750m to the north west.
- No statutory notices were issued under the provision of the Unhealthy Building Act (1990), for the site. No notices were listed for the site with regards to the Contaminated Land Management Act 1997.
- Section 149 (2) and 149 (5) Certificates indicated that *"no information is provided in this certificate as to any contamination of the land"*

Soil and Groundwater Contamination

- The site was considered to be suitable for ongoing commercial / industrial use. The only potential issue of environmental concern that was identified was the possible presence of potentially contaminated, uncontrolled fill which was historically used throughout the Homebush and Lidcombe area.
- As due diligence, it was recommended that limited soil sampling be conducted across the site to assess the presence of uncontrolled fill.

5.2 ERM (2002) Review of Environmental Reports (Document B)

Objective

- Conduct a review of environmental reports prepared for the four properties located at 1-15 Carter Street, Lidcombe, NSW. The objective of the review was to assess any environmental issues, risks and liabilities identified in the discussed reports and to recommend any additional site investigation or associated remediation works that may be required.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I
15 Carter Street	Lot 25 DP225350	6.38 hectares	Report Refs B, D, E

Conclusions and Recommendations

- 1-5 Carter Street – no additional investigation was required and the site was considered suitable for commercial / industrial land use
- 7 Carter Street – delineation of minor TPH contamination was required on the western site boundary (BH13). Notwithstanding this requirement, the site was considered suitable for commercial / industrial land use.
- 9-13 Carter Street – delineation of TPH contamination around the former tank pit at depth was recommended (BH3, BH4 and BH5). Notwithstanding this requirement the site was considered suitable for commercial / industrial land use.
- 15 Carter Street – a Phase 1 Environmental Assessment be conducted to confirm the sites history and number of USTs present on site. No conclusion was made regarding the suitability of the site.
- Preparation of asbestos audits was recommended for buildings located on all four properties.

WSP note that no plans were provided showing the location of the referenced historical boreholes.

5.3 HLA (May 2005) Contamination Overview Report (Document C)

Objective

- Evaluate whether significantly contaminating activities had occurred at the site, which may have resulted in potential environmental liability for Macquarie Goodman.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
29 – 33 Carter Street	Lot 26, 27, 28 in DP225350 and Lot 2 in DP234801	12.8 hectares	Report Ref C

Site History

- No historical aerial photographs were assessed
- Coffey (1997) stated that the site was owned from 1910-1932 by the Minister of Public Works, then from 1932-1965 by the Metropolitan Meat Industry Board (Abattoirs). From 1967-1985, the site was owned by Grace Bros Pty Ltd and used as a distribution centre. From 1985-2000, the site was owned by Ralib Pty Ltd and leased to Coles Myer. Also, the site was used in 1999 as an International Broadcast Centre (IBC) for the Olympic games. From 2000-2005, the site was owned by IBC Homebush Pty Ltd and used for warehousing activities and as a distribution centre.

Soil and Groundwater Contamination

- Coffey (1997) identified the following potential areas of environmental concern:
 - Fleet garage and Washdown Bay
 - USTs (vicinity of weighbridge)
 - Waste compactor/metal storage
 - Bitumen / roadbase storage
 - Storage of steel products
 - Electricity substations
 - Paint shop
 - Truck wash down area
 - Stockpiles
 - Site filling

The report made the following conclusions and recommendations:

- The site was considered suitable for ongoing commercial / industrial land use
- Residual hydrocarbon contamination in soils and groundwater may be associated with the former UST infrastructure, however, the source of contamination was removed and the hydrocarbon impact could be reasonably expected to attenuate over time
- Elevated PAH concentrations were identified in fill materials, which appeared to be associated with the presence of asphalt fragments
- There was potential that filling materials were present beneath the building floor slabs which could not be assessed
- Should the site be redeveloped in the future, confirmation of subsurface conditions through intrusive sampling and analysis should be undertaken to ensure appropriate management measures are implemented
- Should future site use entail excavation and disposal of soils, these should be disposed in accordance with prevailing regulations.

5.4 RES (June 2005) Phase I & II Environmental Site Investigation (Document D)

Objectives

- Review of site history, existing environmental reports and environmental setting to determine the areas of potential concern on the site so these could be targeted in the Phase II investigation;
- Conduct the investigation in accordance with the NSW EPA guidelines for assessing contaminated sites and NEPM (1999) Schedule B(2);
- Evaluate whether soil conditions were in accordance with NSW EPA and NEPM (HILF) commercial/industrial land use criteria and that groundwater met the ANZECC (2000) freshwater guidelines; and
- Make conclusions as to whether the site was considered suitable for commercial/industrial development or whether further assessment or remediation was required.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
15 Carter Street	Lot 25 DP225350	6.38 hectares	Report Refs B, D, E

Lot 25 is located on the corner of Carter Street and Uhrig Road in Homebush. Two main warehouse buildings and a two storey brick building were present on the site.

Site History

- Aerial photographs were reviewed for the years 1930, 1961, 1970, 1978, 1986, 1994 and 2004. Potential sources of contamination identified and targeted in this investigation included residual pesticides from the holding of grazing animals and fill material imported to the site.
- Prior to the mid-1960s the site was used as livestock holding paddocks which were a part of the Metropolitan Meat abattoirs, formerly located on the site of Homebush Bay Olympic Park. Between the mid-1960s and up until 2000, the site was owned and occupied by Smorgan ARC steel products which manufactured steel reinforcing products used in concrete, steel scaffolding, formwork and reinforcing cages. No other operational history was made available during this assessment.
- ERM (2002) reported that in 2001 GHD conducted tank removal and validation works for three USTs. The tanks were located north east and external to the southern warehouse. ERM reported that tank pit validation was completed satisfactorily and complied with current legislation/guidelines. The GHD report was not made available to RES for review. During the site works, RES did not observe any indicators of UST's such as pumps, vents, fill or dip points across the site. RES installed boreholes in the area of the former tank pit and based on the data collected it indicated that the former tank pit was validated in accordance with guidelines as concluded by ERM (2002).

Topography and Environmental Setting

- According to the Parramatta River 9130-3N topographical map, the site has an elevation of approximately 30m AHD and the surrounding area generally slopes southwest towards Carter Street.
- There is approximately 5 metres of fill material on the south western part of the site to level the property.
- The nearest body of water is Haslams Creek located approximately 750 metres to the west of the site. This creek flows north east, and then discharges into Homebush Bay located 2 kilometres north north east of the site.
- According to the 1:100 000 Sydney Geological Series Sheet 9130 (Ed 1, 1983) the site is located on Ashfield Shale comprising black to dark-grey shale and laminate. The overlying soils comprised the Blacktown Group.
- There were no registered groundwater bores within a 1km radius of the site. Groundwater in the general area was not used for any beneficial purpose.
- Groundwater was not encountered on this site during drilling works. Five wells were installed to target any water which may be migrating on the surface of the shale bedrock or which might represent seepage water percolating through the fill material.
- Auburn Council records indicated that:
 - There were no outstanding notices or invoices under section 121ZP of Environmental Planning and Assessment Act (EPAA) (1979) or Section 735A of the Local Government Act (LGA) (1993);
 - 31 August 2000 - Site used was used as a bus facility for Sponsor Western Coach Terminal (SWCT) during the Olympic and Paralympic games.
 - 13 June 2000 - EPA approval of surrender of license 2804 under section 80(2) of Protection of Environment and Operations Act (POEO Act) (1997) for manufacturing of concrete strengthening products by the Australian Steel Company (Operations) Pty Ltd.
 - 20 December 1989 - Application by ISA Contractors Pty Ltd for Landfilling of SW corner of the site. The DA was not approved due to inaccuracies in the application and the risk of soil collapsing onto the road and destruction of trees along Carter St.
 - 17 December 1986 - Approval given to seal a car park with bitumen and construction of an access road off Carter St.
 - 9 March 1981 - Approval given to an application by ARC engineering for additions to the southern section of the western bay.

Soil and Groundwater Contamination

- An assessment of results against the commercial/industrial land use criteria revealed the following:
 - Concentrations of heavy metals, TPH, VOCs (including BTEX) and OC/OPPs in soils were below laboratory detection limits or met the NSW EPA (1994) and NEPM (1999) commercial/industrial land use criteria;
- Groundwater Results
 - Concentrations of dissolved copper, cadmium, nickel and zinc detected in two wells located in the centre of the site were considered to represent natural levels since both wells were installed into the shale bedrock. Water collected from wells installed in fill material (MW1, MW2 and MW4) did not result in metals above criteria and no metal contamination was encountered in fill or natural soils sampled from the site. It is therefore concluded that past and present land use activities have not been a source metals in the groundwater and that concentrations detected reflect naturally occurring levels in natural shale underneath the site.
 - VOCs, PAHs and TPH were below laboratory detection limits for all groundwater samples with the exception of MW3 which had a concentration of 380ug/l for TPH C10-C36. MW3 was located adjacent to the former UST tank pit which was validated by GHD (ERM, 2002). There is no Australian guideline for TPH in groundwater, and the concentration detected is not considered to pose a risk, and represents residual hydrocarbons from the former validated tank pit. In addition the closest down gradient well, MW1, did not record any TPH in the groundwater and therefore the TPH in MW3 is considered to be confined to the former tank pit area.

Conclusions

Based on the concentrations detected from sample holes drilled, absence of groundwater users on the site and in the surrounding area as well as the consideration of the environmental setting of the site, RES was of the opinion that the site was suitable for ongoing commercial/industrial land use.

5.5 HLA (2 August 2005) Site Audit Statement and Site Audit Report (Document E)

Objective

- A site audit to determine the land use suitability for commercial/industrial uses. The report reviewed was "Phase I & II Environmental Site Investigation, 15 Carter Street, Homebush, NSW" by RES dated June 2005 (Document D).

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
15 Carter Street	Lot 25 DP225350	6.38 hectares	Report Refs B, D, E

Conclusions:

- The Audit concluded that the site was suitable for continued commercial/industrial land use but noted that disposal of soil from the site during redevelopment had not been considered.

5.6 Douglas Partners (September 2006) Geotechnical Investigation (Document F)

Objective

- Provide a geotechnical investigation for the proposed Homebush Corporate Centre at Carter Street, Homebush.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I

Topography and Environmental Setting

- The topography of the region comprises moderately undulating terrain
- The site is located in an area of moderate salinity potential, with high salinity potential along creeks and waterways
- The site is underlain by Ashfield Shale of Triassic Age. Ashfield Shale typically comprises black to dark grey shale and laminate and weathers to form clays of moderate to high plasticity

Ground and Groundwater Conditions

- No free groundwater was observed in the boreholes during augering. Groundwater levels were measured in the standpipes installed in four boreholes across the site and ranged between 2.6 and 6m bgl (RL 6.9 to 11.8m).
- If excavation is conducted, groundwater seepage into the excavation is expected. Any seepage should be minor and was expected to be controllable by pumping from sumps in the excavation. The drainage system for the permanent basement structure should allow for removal of some seepage via a system of perimeter drains behind the basement walls.

Soil Results / Recommendations

- The investigation revealed that soils were generally covered with pavements followed by topsoil/filling and then clay underlain by weathered shale.
- A maximum excavation depth of about 8m was anticipated for the lowest basement level, due to the sloping nature of the site. If excavation is required to a greater depth, it was suggested that additional advice be sought.
- Based on the boreholes, it was expected that the excavated material will comprise filling, clays and shale/laminate bedrock varying in strength from extremely low strength to high strength. Low to very low strength rock could be removed by conventional excavators and medium sized dozers. Excavation in higher strength materials will required moderate to heavy ripping, rock breaker attachments and / or rotary rock saw.
- All material to be disposed off site should be the subject of a waste classification assessment. The natural clay soils and bedrock underlying the filling are likely to be classified as virgin extracted natural material (VENM) but still requires testing to satisfy NSW EPA requirements. It was also recommended that dilapidation surveys be conducted on adjoining footpaths and pavements prior to commencing work on site (including demolition work).

5.7 WSP (July 2007) Phase 1 and Phase 2 Environmental Assessment (Document G)

Objectives

- Conduct investigation works in accordance with relevant NSW Department of Environment and Conservation (DEC, formerly EPA) guidelines and in consultation with the appointed site auditor;
- Assess the soil quality at the site and the degree of any soil contamination associated with past and present use;
- Determine whether there was any risk to human health and/or the environment with regards to soil quality; and,
- Assess the soil and make conclusions on its suitability for its proposed commercial and sensitive land use redevelopment from a land contamination perspective.

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I

The site covered a total area of 52,035m² and was occupied by an industrial estate comprising four (4) office / warehouse units with associated vehicular access, loading bays, car parking and limited landscaping around the perimeter of the site. Site structures were constructed of glass, corrugated iron walls and roofing, brick and concrete walls, all on concrete slabs.

Site History

- The selected photos were sourced from the Department of Lands and included the 1930, 1951, 1961, 1970, 1978, 1986, 1994 and 2005 series. No industrial activity on the site was apparent from the aerials, however, on the surrounding land the aerials show industrial units and infrastructure as well as railway/rail siding north of the site. Also, the north of the site had been redeveloped as Sydney Olympic Park.
- Historical site uses included a Public Works Yard, Stock Holding Pens, Air Conditioning Supplier, Pipeline Materials Supplier, Austral and Capral Aluminium Suppliers, Bearing Service Proprietary Limited and miscellaneous Fashion and Clothing Warehouses.
- Potentially contaminating uses associated with the uses included general fill materials and localised point sources of contamination associated with stockpiles, former ASTs and UST and a flammable goods store. The contaminants typically associated with these uses generally included heavy metals, hydrocarbons, asbestos and pesticides.
- Workcover search of licenses to keep dangerous goods indicated that:
 - Licences to keep dangerous goods have been allocated to all lots on the subject site;
 - Chemical classes included 2, 3, 5.1 and 6.1(b); and,
 - Dangerous goods stored on site were held in licensed chemical and flammable goods storage areas and buildings, and were generally of small volumes, ranging between 20L to 2450L. These dangerous goods incorporated petroleum hydrocarbons, alcohols, nitrous oxide, toluene, xylenes, chlorinated hydrocarbons, acetate, paint products and solvents. Where possible these areas were targeted by the WSP investigation and it is considered that if there have been any spillages or leaks of these compounds in the past, the sampling suite performed by WSP captured the presence, if any, of these in the sub surface material.

Topography and Environmental Setting

- The site, in general, had a moderate slope overall but also had localised terracing and levels from approximately 12m AHD in the east, down to approximately 7m AHD in the west.
- Surface run-off flows towards Haslams Creek, approximately 650m west of the site, via gutters and drains. Haslams Creek flows along a path of approximately 2.5km before discharging into Homebush Bay, which is part of the Parramatta River.
- The site is located on a soil transitional zone encompassing Birrong Fluvial Soils and the Blacktown Residual Soils.
- The geology immediately underlying the site is comprised from Ashfield Shale
- It was expected that the regional groundwater flow direction was to the west and north towards Haslams Creek and Parramatta River.
- The Phase 1 identified the following areas of potential environmental concern:
 - The flammable goods storage building at HA2;
 - Former potential location of a AST at BH17-7;
 - Former location of UST at BH18-2;
 - Former location of UST at BH17-6 and BH16-5;
 - Fuel AST at BH19-2; and,
 - Former potential location of UST at BH20-5.
 - The two (2) stockpiles on lot 24 also are also potential source of contamination.
 - In addition, previous storage locations of chemical and flammable goods also have potential to impact the subject site and have been targeted by localised boreholes BH16-4, BH17-3, BH17-5, BH19-3, BH19-6, BH19-8, BH21-3, BH22-4 and BH22-5.

Soil and Groundwater Contamination

- The ground conditions encountered typically comprise concrete, tarmac or grassed surfacing which is underlain by a combination of granular (maximum 1.56m bgl) and cohesive fill (maximum 2.8m bgl), reworked natural materials (maximum 3.1m bgl) and completely to moderately weathered shale (maximum depth proven by the WSP investigation 4.2m bgl). No groundwater was encountered during the formation of the exploratory holes.
- There was no visual evidence of contamination noted during the exploratory Phase 2 investigation.
- PID results fall below detection or background levels (i.e. <2.2ppm) with the exception of a result taken from BH18-8 at 2.0 to 2.2m of 60.3ppm. This sample was located approximately 1m down gradient from a former UST on lot 18.
- All of the soil testing results obtained for the site works conducted by WSP fall below the residential (HIL A) and commercial / industrial levels (HIL F) and EILs outlined in NEPM 1999, with the following exceptions
- Stockpile sample SP1A detected chrysotile asbestos fibres, which was an isolated occurrence from the fourteen (14) other samples tested;
- Twenty two (22) soil samples exceeded the NEPM (1999) EIL guideline concentration for nickel (60 mg/kg);
- Two (2) samples exceeded the NEPM (1999) EIL guideline concentration for zinc (200 mg/kg);
- Two samples (2), obtained from BH24-8 at 0.1 to 0.4m bgl and BH17-6 at 0.15-0.3m bgl, were found to contain a TPH (C10 to C36) concentration of 9,070 mg/kg and 1,910 mg/kg respectively, which is in excess of the 1,000mg/kg guideline value. The BH24-8 (0.1-0.4) sample was taken from the northern end of lot 24, which is consistently being used for the loading and unloading of shipping containers onto large trucks. The most likely source of the TPH contamination is considered to have originated from a diesel spill or leak by a site vehicle; and,
- The sample BH24-6 (0-0.15m) had a Benzo(a)pyrene concentration of 1.10 mg/kg, which exceeded the NEPM (1999) HIL 'A' guideline for a sensitive land use.

Recommendations

- Prior to renovation or demolition, all hazardous materials should be removed from the property in accordance with current best practice;
- The above ground tank adjacent to borehole BH19-2 should be decommissioned by an appropriately licensed contractor and validated accordingly; and,
- A management plan will need to be compiled to ensure that all tenant operated plant is decommissioned in an appropriate manner.
- Based on WSP observations and the testing completed, asbestos does not occur within the below ground fill at the site. However, isolated asbestos fibres were detected in one of two samples taken from Stockpile 1 which may pose a potential risk to site occupiers and should be managed or removed from site at the earliest possible opportunity in accordance with current best practice.
- Generally, concentrations of heavy metals, TPH, PAHs, VOCs, SVOC's, PCB's and cyanide in soil samples meet both the residential and commercial/industrial land use criteria. The two exceptions being, the exceedence of TPH (NSW EPA "(1994) service station guidelines) and benzo(a)pyrene (NEPM 1999 HIL 'A' sensitive land use guideline) criteria in soil at two separate isolated locations (BH24-8 and BH17-6 respectively).
- The TPH exceedence could be attributed to localised spillage from vehicles on site in the north western corner of the property off Uhrig Road. Data does not suggest widespread TPH soil contamination. The vertical extent of the benzo(a)pyrene is considered fairly well defined however, further investigations are to be undertaken, to assess the significance of this contamination.
- Although there is an absence of volatile contaminants and therefore no vapour risk to occupants the impact occurs very close to the surface in an area with no concrete slab. Bearing this in mind and given that this contaminant may continue to be an ongoing source of impact to groundwater it is recommended that the TPH hotspot delineated, remediated and validated in accordance with current best practice;

- Given the historical uses of the site other hotspots of contamination may be encountered during the proposed redevelopment process (e.g. former UST in the north eastern corner of Lot 20 or service line associated with the former tank in Lot 17/18). Desk-based efforts were unable to firmly identify the existence and locations of USTs in these Lots. Consequently, it was recommended that a Ground Penetrating Radar (GPR) survey was undertaken to determine the presence or otherwise of these USTs or former, remediated tank pits.
- In summary, provided that a remedial action plan and associated validation report was prepared to address the aforementioned points, it was considered that the site was suitable for the proposed commercial redevelopment with associated child care facilities from a contamination perspective.

5.8 WSP (December 2007) Additional Investigation Works (Document H)

Objectives

- Confirm the existence or otherwise of underground storage tanks (USTs) at two locations using GPR techniques;
- Conduct additional targeted investigation works in accordance with relevant NSW Department of Environment and Climate Change (DECC, formerly DEC) guidelines and in consultation with the appointed site auditor;
- Determine whether there was any risk to human health and/or the environment with regards to soil quality at previously identified hotspot locations; and,
- Assess the soil and make conclusions on its suitability for its proposed commercial and localised sensitive land use redevelopment from a land contamination perspective.
- Delineation some hotspot areas and USTs

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I

Recommendations

- To render the site suitable for the proposed commercial with integrated sensitive child care end use it was considered necessary to remediate the hydrocarbon hotspot identified in BH24-8 at 0.1 to 0.4m bgl (identified during the former Phase 1 and Phase 2 Investigation).
- Concentrations of BaP exceeding the NEPM (1999) HIL -A residential land use criteria (1mg/kg) were identified in shallow soil at BH24-10 (0-0.1m) and BH24-6 (0-0.15m). As two childcare facilities are proposed in the development plan, the BaP impacted soil was to be removed and validated as a component of the RAP.
- The presence of chrysotile asbestos fibres detected in BH24-11 (0.4 to 0.6m) needed to be delineated and managed during the construction process. A contingency plan was presented in the RAP.
- The GPR survey conducted at the site did not yield any information on the presence or otherwise of suspected USTs on Lot 20. Consequently, the potential existence of USTs in this area needed to be addressed during development works and a contingency plan for this potential eventuality was presented in the RAP.
- It was recommended that a nominal topsoil capping layer be implemented for grassed areas, which should be deepened accordingly for shrubs and trees.
- It was recommended that the groundwater quality migrating westwards from Lot 20 was determined to assess whether the potential USTs on this Lot are impacting the down-gradient water quality.
- In summary, provided that a remedial action plan and associated validation report was prepared to address the aforementioned points, it was considered that the site was suitable for the proposed commercial redevelopment with associated child care facilities from a contamination perspective.

5.9 WSP (December 2007) Remedial Action Plan (Document I)

Objectives

- Reduce potential risk to future site occupiers and surrounding natural environment;
- Appropriately classify and, as necessary, remediate soils which will be excavated for off site disposal to registered waste receiving facilities;
- Develop and adopt a strategy which allows for the expeditious completion of remedial works with minimal disturbance to adjoining properties;
- Outline a remedial scope, validation and environmental monitoring programme for the site; and,
- Render the site suitable for the proposed commercial/industrial redevelopment, with localised sensitive land use (i.e. two child care facilities).

Site Identification and Description

Site Address	Lot and DP	Site Area	Comments
1 – 5 Carter Street	Lot 16, 17, 18 in DP225350	1.82 hectares	Report Refs B, F, G, H, I
7 Carter Street	Lot 19 and 24 in DP225350	1.42 hectares	Report Refs B, F, G, H, I
9 – 13 Carter Street	Lot 20, 21, 22 in DP225350	1.27 hectares	Report Refs B, F, G, H, I

Remedial Activities

The remedial activities, for which the RAP was prepared, included:

- The delineation, excavation and disposal of asbestos, TPH and BaP impacted soil at five locations identified in Documents G and H above (namely at Stockpile 1 (located in Lot 24) and at boreholes BH24-6, BH24-8, BH24-10, BH24-11 (located in Lot 24)). The combined estimated volume of contaminated material was 1300m³;
- Classification of the excavated material for offsite disposal;
- Validation of the excavations to confirm that the remaining soil meets the residential land use criteria;
- Reinstatement of the excavations with clean fill; and,
- Preparation of a validation report to confirm that impacted soil had been removed.

WSP note that the RAP was not implemented.



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Area No: 3035

The information below was correct at the time the notices were issued.

Site: Aquatic Centre Car Park

Address: Olympic Boulevard, Homebush Bay, 2127

LGA: Auburn Council

Occupier: Sydney Olympic Park Authority

Lot 1 DP 740600	Lot 1 DP 774130	Lot 27 DP 793595	Lot 101 DP 849975	Lot 102 DP 849975
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Notices relating to this site (1 current and 8 former)

(Map) where available, maps show the part of the site affected by the notice

*notice matched search criteria

Notice recipient	Notice type & number	Status	Date
Sydney Olympic Park Authority	Notice for Maintaining Remediation * 28040 Map	Current	Issued 23 Jan 2009
Sydney Olympic Park Authority	Notice for Maintaining Remediation * 28038	Former	Issued 12 Nov 2008
Olympic Co-ordination Authority	Notice for Maintaining Remediation * 28005	Former	Issued 26 Aug 1998 Revoked 12 Nov 2008
Olympic Co-ordination Authority	Section 35 EHC Act Order * 508	Former	Issued 26 Aug 1998 Revoked 01 Sep 1998
Olympic Co-ordination Authority	Section 35 EHC Act Order * 488	Former	Issued 04 May 1998 Revoked 01 Sep 1998
Olympic Co-ordination Authority	Section 35 EHC Act Order * 411 Map	Former	Issued 11 Aug 1995 Revoked 04 May 1998
Civic & Civic Pty Ltd	Section 35 EHC Act Order * 317	Former	Issued 21 Dec 1992 Revoked 11 Aug 1995
State Rail Authority	Section 35 EHC Act Order * 309	Former	Issued 03 Feb 1992 Revoked 11 Aug 1995
State Rail Authority	Section 35 EHC Act Order * 198	Former	Issued 18 Jan 1991 Revoked 03 Feb 1992

15 April 2013

Environment Protection Authority**Maintenance of remediation notice****Sections 28 of the Contaminated Land Management Act 1997**

REGISTERED MAIL

Sydney Olympic Park Authority
7 Figtree Drive
SYDNEY OLYMPIC PARK NSW 2127

Attention: Mr David Young, General Manager Operations & Sustainability

Notice Number: 28040

This notice is issued under section 28 of the Contaminated Land Management Act 1997 ("the Act").

Sydney Olympic Park Authority (SOPA), "the recipient", must maintain remediation action in accordance with the requirements set out in this notice.

1. Land to which this notice applies ("the land")

This notice applies to the following waste containment areas within the Sydney Olympic Park:

Aquatic Centre Carpark Landfill; Bicentennial Park Landfill; Blaxland Common Landfill; Golf Driving Range Landfill; Kronos Hill Landfill; Woo-La-Ra Landfill and Wilson Park Bioremediation.

Their locations and boundaries are defined in the [attached map](#). This map is referenced as 001-G-G-0112 Rev. B and is contained in a SOPA document entitled "*Remediated Lands Management Plan January 2009*".

2. Background

The Sydney Olympic Park ("the SOP") was the venue of the Sydney 2000 Olympic Games. It is located at Homebush Bay — a large piece of land that had been used for uncontrolled landfilling for many years before it was redeveloped as the major Games venue. This resulted in wide spread contamination of the area. Assessment of the contamination in the areas began in the late 1980's and site remediation began in the early 1990's.

With the exception of the remediation of Wilson Park, the remediation strategy was to consolidate and re-contain the waste into several areas within the SOP. In the process, the majority of the SOP area had the buried waste removed and was subsequently redeveloped for the Games. The excavated waste was transferred to the designated waste containment areas. These areas, which include but are not limited to the land of which this notice applies, were capped, landscaped and turned into parkland. Leachate collection and transfer systems were also built to prevent leachate from escaping.

Wilson Park was a former Gasworks site. The nature of the contamination is waste liquid tar rather than uncontrolled landfilling. However, the remediation strategy adopted is also "cap-and-contain" similar to the remediation of the landfilling areas within the SOP.

The remediation of the waste containment areas of which this notice applies occurred at different timelines. Therefore, these waste containment areas were regulated by the Environment Protection

Authority ("EPA") on an individual basis. The regulatory instruments include notices issued under section 35 of the Environmentally Hazardous Chemicals Act, voluntary remediation agreement under section 23 of the Act and notices under section 28 of the Act depending on the stage of the remediation at the time the regulatory instruments were issued. The EPA however has envisioned that these regulatory instruments will eventually be converted into a single maintenance of remediation notice under section 28 of the Act.

In March 2007, SOPA provided the EPA with a draft document entitled *Remediated Landfill Systems – Operational Management Plan*. This represents SOPA's attempt to deal with the post-remediation management of the waste containment areas in a holistic way.

This document was subsequently revised and renamed to "*Remediated Lands Management Plan*". The revised document is supplemented with environmental monitoring data collected between years 2002 – 2007. The EPA is generally satisfied with the monitoring results, which suggest that the waste containment areas pose no unacceptable impact on their surrounding environment. The EPA however considers that additional environmental groundwater monitoring points will be required for some of the waste containment areas.

3. Commencement of this notice

This notice takes effect from the date of this notice and continues in force as varied from time to time, until it is revoked.

4. Maintenance and reporting requirements

Implementing the Remediated Lands Management Plan

- A. The recipient must manage the post-remediation of the land in accordance with the SOPA document entitled "*Remediated Lands Management Plan January 2009*" or its subsequent revisions that have been accepted by the EPA ("the RLMP"). In particular, the recipient must carry out the environmental monitoring program in accordance with Section 11 of the RLMP under the heading "*Environmental Monitoring, Performance Assessment and Report*".

Additional environmental groundwater monitoring points that may be required

- B. Within 12 months of the date of this notice, the recipient must provide the EPA with a report justifying the groundwater monitoring strategy at Blaxland Common landfill and Kronos Hill landfill, including any additional groundwater monitoring points that have been or will be installed.

Reporting to the EPA

- C. The recipient must prepare a report once every two years. The report must include but is not necessarily limited to:
- 1) The reporting of the operational performance of the waste containment systems in the preceding two years;
 - 2) The sampling and laboratory results of the monitoring program listed in Table 11.1 of the RLMP; and
 - 3) The interpretation of the sampling and laboratory results with respect to the performance of the waste containment systems.
- D. The report must be reviewed by a site auditor accredited under the Act in relation to the performance of waste containment systems.
- E. The first report and the auditor's review of the report must be provided to the EPA within 24 months from the date of this notice.
- F. The subsequent reports and the auditor's review of the reports must be submitted to the EPA in a frequency of once every two years until such time that the EPA varies the frequency of the submission.

5. Notification of change of owner/occupier

At least 30 days prior to the recipient ceasing to be the owner or occupier of the land to which this notice applies the recipient must give written notification to the EPA of the name and contact details of the prospective owner or occupier.

[Signed]

NIALL JOHNSTON
Manager Contaminated Sites

Date: 23 January 2009

NOTE:

Breaches of this Notice

A person who fails to comply with a notice issued under section 28 of the Act is guilty of an offence. Heavy penalties may be imposed where a person fails to comply with directions given in a notice issued under section 28 of the Act.

Information recorded by the EPA

Section 58 of the Contaminated Land Management Act 1997 and clause 6 of the Contaminated Land Regulation requires the EPA to maintain a public record. A copy of this notice will be included in the public record.



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6708	BRONSON & JACOBS PTY LTD	5 PARKVIEW DRIVE, HOMEBUSH BAY, NSW 2127	POEO licence	Surrendered	11 Aug 2000
1016993	BRONSON & JACOBS PTY LTD	5 PARKVIEW DRIVE, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	23 May 2002
1056329	BRONSON & JACOBS PTY LTD	5 PARKVIEW DRIVE, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	10 Apr 2006
12696	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	POEO licence	Issued	27 Aug 2007
1083630	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	16 Jun 2008
1097026	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	22 Jan 2009
1117906	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	05 Aug 2010
1118803	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	20 Sep 2010
1120762	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	13 Jul 2011
3085765311	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	Penalty Notice	Issued	24 Aug 2012
1510981	HOMEBUSH BAY RECYCLING CENTRE PTY LTD	3 Burroway Road, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	19 Dec 2012
5192	SITA AUSTRALIA PTY LTD	3 BURROWAY ROAD, HOMEBUSH BAY, NSW 2127	POEO licence	Surrendered	15 Jun 2000
4547	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	POEO licence	Issued	23 Jun 2000
1019923	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	18 Sep 2002
1037092	SITA AUSTRALIA PTY LTD	3 BURROWAY ROAD, HOMEBUSH BAY, NSW 2127	s.91 Clean Up Notice	Issued	21 May 2004
1048632	SITA AUSTRALIA PTY LTD	3 BURROWAY ROAD, HOMEBUSH BAY, NSW 2127	s.81 Variation of a Surrender Condition	Issued	15 Jun 2005
1051917	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	24 Oct 2005
1092776	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	11 Nov 2008

1501904	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	03 Nov 2011
1513313	SITA AUSTRALIA PTY LTD	HILL ROAD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Pending	06 Dec 2012
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10020	SYDNEY OLYMPIC PARK AUTHORITY	Marjorie Jackson Parkway, Edwin Flack Avenue, HOMEBUSH BAY, NSW 2127	POEO licence	Issued	10 Sep 1999
10142	SYDNEY OLYMPIC PARK AUTHORITY	Australia Avenue, HOMEBUSH BAY, NSW 2127	POEO licence	Surrendered	08 Oct 1999
1039389	SYDNEY OLYMPIC PARK AUTHORITY	Marjorie Jackson Parkway, Edwin Flack Avenue, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	16 Dec 2004
1063016	SYDNEY OLYMPIC PARK AUTHORITY	Marjorie Jackson Parkway, Edwin Flack Avenue, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	01 Sep 2006
4560	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	POEO licence	Issued	27 Sep 2001
1015215	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	02 May 2002
1021170	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	19 Feb 2003
1027276	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	27 Jun 2003
1030216	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	26 Aug 2003
1031267	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	29 Sep 2003
1035257	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	14 Jul 2004
1040684	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	27 Sep 2004

1044268	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	14 Feb 2005
1048882	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	23 Jun 2005
1052275	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	28 Sep 2005
1053433	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	05 Dec 2005
1076609	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	13 Aug 2007
1093347	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	13 Nov 2008
1125263	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	01 Apr 2011
3051702015	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	Penalty Notice	Issued	02 Feb 2012

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1508459	TRANSPACIFIC INDUSTRIES PTY. LTD.	CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW 2127	S 58 Licence Variation	Issued	24 Oct 2012

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Licence summary

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Summary Licence No: 10020

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Licence holder: SYDNEY OLYMPIC PARK AUTHORITY
Premises: SYDNEY OLYMPIC PARK
 Marjorie Jackson Parkway, Edwin Flack Avenue, HOMEBUSH BAY, NSW, 2127
LGA: CITY OF AUBURN **Catchment:** Sydney Coast & Georges River
Administrative fee: \$565.00
Licence status: Issued
Activity type: Sewage treatment processing by small plants
 Miscellaneous licensed discharge to waters (at any time)
Licence review: Complete date 26 May 2009
 Complete date 26 May 2004
 Due date 26 May 2014

Notices

<u>Number</u>	<u>Issue date</u>	<u>Notice type</u>
1039389	16 Dec 2004	S 58 Licence Variation
1063016	01 Sep 2006	S 58 Licence Variation

Annual Returns

<u>Start date</u>	<u>End date</u>	<u>Date received</u>	<u>Non-compliance</u>	<u>LBL data</u>
30-Jun-2011	29-Jun-2012	22-Aug-2012	yes	view
30-Jun-2010	29-Jun-2011	30-Aug-2011	yes	view
30-Jun-2009	29-Jun-2010	24-Aug-2010	No	view
10-Sep-2008	29-Jun-2009	05-Aug-2009		Not available
10-Sep-2007	09-Sep-2008	04-Nov-2008	yes	view
10-Sep-2006	09-Sep-2007	23-Oct-2007	No	view
10-Sep-2005	09-Sep-2006	02-Nov-2006	No	view
10-Sep-2004	09-Sep-2005	15-Nov-2005	No	view
10-Sep-2003	09-Sep-2004	10-Nov-2004	No	view
10-Sep-2002	09-Sep-2003	07-Nov-2003	No	view
10-Sep-2001	09-Sep-2002	04-Nov-2002	No	view
10-Sep-2000	09-Sep-2001	08-Nov-2001	No	view
10-Sep-1999	09-Sep-2000	07-Dec-2000	yes	view



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Summary Licence No: 4547

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Licence holder: SITA AUSTRALIA PTY LTD
Trading as: SITA ENVIRONMENTAL SOLUTIONS
Premises: AUBURN WASTE & RECYCLING CENTRE
 HILL ROAD, HOMEBUSH BAY, NSW, 2127
LGA: CITY OF AUBURN **Catchment:** Sydney Coast & Georges River
Administrative fee: \$3,616.00
Licence status: Issued
Activity type: Recovery of general waste
 Waste storage - other types of waste
 Non-thermal treatment of general waste
 Waste storage - waste tyres
 Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste
Licence review: Complete date 16 Sep 2010
 Complete date 16 Sep 2005
 Complete date 18 Sep 2002
 Due date 16 Sep 2015

Applications

<u>Number</u>	<u>Application type</u>	<u>Current status</u>	<u>Date received</u>
146424	s.55 Licence Transfer	Approved	23 Feb 2011
1513313	S 58 Licence Variation	Pending	06 Dec 2012

Notices

<u>Number</u>	<u>Issue date</u>	<u>Notice type</u>
1019923	18 Sep 2002	S 58 Licence Variation
1051917	24 Oct 2005	S 58 Licence Variation
1092776	11 Nov 2008	S 58 Licence Variation
1501904	03 Nov 2011	S 58 Licence Variation

Annual Returns

<u>Start date</u>	<u>End date</u>	<u>Date received</u>	<u>Non-compliance</u>	<u>LBL data</u>
01-May-2011	30-Apr-2012	02-Jul-2012	No	Not available
01-May-2010	30-Apr-2011	30-Jun-2011	No	Not available
01-May-2009	30-Apr-2010	04-Jun-2010	No	Not available
01-May-2008	30-Apr-2009	24-Jun-2009	No	Not available
01-May-2007	30-Apr-2008	23-Jun-2008	No	Not available
01-May-2006	30-Apr-2007	02-Jul-2007	No	Not available
01-May-2005	30-Apr-2006	24-May-2006	No	Not available
01-May-2004	30-Apr-2005	24-Jun-2005	No	Not available
01-May-2003	30-Apr-2004	29-Jun-2004	No	Not available
01-Nov-2002	30-Apr-2003	23-Jun-2003	No	Not available
01-Nov-2001	31-Oct-2002	30-Dec-2002	No	Not available
01-Nov-2000	31-Oct-2001	28-Dec-2001	No	Not available
01-Nov-1999	31-Oct-2000	29-Dec-2000	No	Not available



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Summary Licence No: 4560

[View this licence](#) (PDF document 159 kb)

Licence holder: TRANSPACIFIC INDUSTRIES PTY. LTD.
Premises: HOMEBUSH BAY LIQUID TREATMENT PLANT
 CORNER OF PONDAGE LINK & HILL RD, HOMEBUSH BAY, NSW, 2127
LGA: CITY OF AUBURN **Catchment:** Sydney Coast & Georges River
Administrative fee: \$3,616.00
Licence status: Issued
Activity type: Waste storage - hazardous, restricted solid, liquid, clinical and related waste and asbestos waste
 Non-thermal treatment of hazardous and other waste
Licence review: Complete date 27 Jun 2008
 Complete date 27 Sep 2004
 Complete date 27 Jun 2003
 Due date 27 Jun 2013

Applications

<u>Number</u>	<u>Application type</u>	<u>Current status</u>	<u>Date received</u>
142513	S 58 Licence Variation	Refused	08 Mar 2004
143524	S 58 Licence Variation	Approved	29 Apr 2005
143569	s.55 Licence Transfer	Approved	30 Jun 2005
1106819	S 58 Licence Variation	Issued	19 Mar 2009

Notices

<u>Number</u>	<u>Issue date</u>	<u>Notice type</u>
1015215	02 May 2002	S 58 Licence Variation
1021170	19 Feb 2003	S 58 Licence Variation
1027276	27 Jun 2003	S 58 Licence Variation
1030216	26 Aug 2003	S 58 Licence Variation
1031267	29 Sep 2003	S 58 Licence Variation
1035257	14 Jul 2004	S 58 Licence Variation
1040684	27 Sep 2004	S 58 Licence Variation
1044268	14 Feb 2005	S 58 Licence Variation
1048882	23 Jun 2005	S 58 Licence Variation
1052275	28 Sep 2005	S 58 Licence Variation
1053433	05 Dec 2005	S 58 Licence Variation
1076609	13 Aug 2007	S 58 Licence Variation
1093347	13 Nov 2008	S 58 Licence Variation
1106819	09 Nov 2009	S 58 Licence Variation
1125263	01 Apr 2011	S 58 Licence Variation
1508459	24 Oct 2012	S 58 Licence Variation
1511669	31 Jan 2013	Penalty Notice
1511670	02 Feb 2012	Penalty Notice

Pollution studies and reduction programs

<u>Title</u>	<u>Program type</u>	<u>Start date</u>	<u>Complete date</u>
Replacement of OCF Heat Exchanger	Air	10 Feb 2012	Conditions

Computer dispersion modelling on stack
emissions

Air

31 Oct 2011

[Conditions](#)**Annual Returns**

<u>Start date</u>	<u>End date</u>	<u>Date received</u>	<u>Non- compliance</u>	<u>LBL data</u>
30-Sep-2011	29-Sep-2012	04-Dec-2012	yes	Not available
30-Sep-2010	29-Sep-2011	09-Nov-2011	No	Not available
30-Sep-2009	29-Sep-2010	01-Dec-2010		Not available
30-Sep-2008	29-Sep-2009	20-Nov-2009	No	Not available
30-Sep-2007	29-Sep-2008	01-Dec-2008	yes	Not available
30-Sep-2006	29-Sep-2007	05-Dec-2007	yes	Not available
01-Oct-2005	29-Sep-2006	16-Nov-2006	yes	Not available
01-Oct-2004	30-Sep-2005	30-Nov-2005	yes	Not available
01-Oct-2003	30-Sep-2004	02-Dec-2004	yes	Not available
01-Nov-2002	30-Sep-2003	26-Nov-2003	yes	Not available
01-Nov-2001	31-Oct-2002	31-Dec-2002	yes	Not available
01-Nov-2000	31-Oct-2001	15-Feb-2002	yes	Not available
01-Nov-1999	31-Oct-2000	31-Jan-2001	No	Not available



Attachment 3: Additional Contamination Investigation

Table 1. Soil Results

[illegible][illegible][illegible]

National Environmental Protection Measure (NEPM) Health and Phytotoxicity Investigation Levels (1999)
NSW Environmental Protection Agency (EPA) Service Station Guidelines (1994)

Notes:

Asbestos <0.1	Trip Spike results reported as % recovery
*	No asbestos or respirable fibres detected at reporting limit of 0.1g/kg
ND	There are currently no guidelines for Chromium (III + VI). The Chromium VI criteria was therefore adopted for total Chromium
LOR	Non-Detect
-	Limit of Reporting
-	Not tested / analysed
0.1	Red indicates concentration is above the EPA 1994 Service Station Guidelines
0.1	Italics indicates concentration is above the NEPM 1999 HIL E Guidelines
0.1	Highlighted indicates concentration is above the NEPM 1999 HIL A Guidelines
0.1	Underlined indicates concentration is above the NEPM 1999 HIL D Guidelines
0.1	Bold indicates concentration is above the NEPM 1999 HIL F Guidelines

Table 2. Preliminary Waste Classification

[illegible][illegible][illegible]

Assessment levels taken from:

National Environmental Protection Measure (NEPM) Waste Classification Guidelines

Table 2. Preliminary Waste Classification

		PAH / Phenolics																Polychlorinated Biphenyls										SPOCAS							
		Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benz(a) pyrene	Benz(a) pyrene (TCLP)	Benz(b)&(k)fluoranthene	Benz(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH	Phenolics Total	Krochlor 1016	Krochlor 1021	Krochlor 1202	Krochlor 1242	Krochlor 1248	Krochlor 1254	Krochlor 1280	Acid Reacted Calcium	Calcium in Peroxide	KCl Extractable Calcium	KCl Extractable Magnesium	Magnesium in Peroxide	Peroxide Oxidisable Sulfur	Sulfur in Peroxide		
		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/L	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	%	%	%	%	%	%			
EOL		0.1	0.1	0.1	0.1	0.05	0.001	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.005	0.005	0.005	0.005	0.005	0.005	0.005			
NSW 2009 General Solid Waste CT1 (No Leaching)						0.8																													
NSW 2009 General Solid Waste SCC1 (with leached)						10												200	518																
NSW 2009 General Solid Waste TCLP1							0.04																												
NSW 2009 Restricted Solid Waste CT2 (No Leaching)						3.2																													
NSW 2009 Restricted Solid Waste SCC2 (with leached)						23												800	2073																
NSW 2009 Restricted Solid Waste TCLP 2							0.16																												
Field ID	Location	Depth	Date	Waste Class	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH01	BH01	0.5	27/03/2013	General	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH02	BH02	0.5	27/03/2013	General	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH03	BH03	0.2	27/03/2013	General	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH04	BH04	0.3	27/03/2013	General	<0.1	<0.1	<0.1	0.1	0.1	-	<0.2	<0.1	0.1	<0.1	0.3	<0.1	<0.1	0.1	0.3	1.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-		
BH04	BH04	4	27/03/2013	General	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH05	BH05	0.5	26/03/2013	General	<0.1	<0.1	<0.1	<0.1	<0.05	-	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-	-			
BH07	BH07	0.2	27/03/2013	General	<0.1	<0.1	<0.1	0.1	0.09	-	<0.2	<0.1	<0.1	<0.1	0.2	<0.1	0.1	<0.1	<0.1	0.2	1.24	<0.1	<0.1	<0.1	<										

National Environmental Protection Measure (NEPM) Waste Classification Guidelines



WSP Environmental Pty Ltd
Table 3. Groundwater Results

00037445 Land Capability Assessment

	BTEX						TPH					Metals									
	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene (Total)	C6 - C9	C10 - C14	C15 - C28	C29-C36	C6-C10	Arsenic (Filtered)	Cadmium (Filtered)	Chromium (III+VI)* (Filtered)	Copper (Filtered)	Lead (Filtered)	Mercury (Filtered)	Nickel (Filtered)	Zinc (Filtered)	Hexachlorobenzene	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	µg/L	
EQL	1	1	1	2	1	3	10	50	100	100	0.01	0.001	0.0001	0.001	0.001	0.001	0.00005	0.001	0.001	0.2	
ANZECC 2000 MW 95%	500												0.0055	0.0044	0.0013	0.0044	0.0004	0.07	0.015		
EPA 1994 Service Station - Marine Ecosystems	300	140^	300^			380															

Field ID	Location	Date	Matrix	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0002	<0.001	0.001	<0.001	<0.00005	0.003	0.006	<0.2
MW6	MW6	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0017	0.001	0.002	0.004	<0.00005	0.087	0.12	<0.2
MW7	MW7	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0002	0.001	0.001	<0.001	<0.00005	0.008	0.019	<0.2
MW8	MW8	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0002	0.001	0.001	<0.001	<0.00005	0.008	0.019	<0.2
MW9	MW9	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0006	<0.001	0.003	<0.001	<0.00005	0.021	0.069	<0.2

Quality Control

DUP	MW6	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	0.0002	<0.001	0.001	<0.001	<0.00005	0.003	0.009	<0.2
RINSATE	-	3/04/2013	Water	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	<0.0001	0.001	<0.001	<0.001	<0.00005	<0.001	<0.001	<0.2

Statistical Summary

Number of Results	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	1	5	3	5	1	0	5	5	0
Minimum Concentration	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	<0.001	<0.0001	<0.001	<0.001	<0.001	<0.00005	<0.001	<0.001	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.0002	0.001	0.001	0.004	ND	0.003	0.006	ND
Maximum Concentration	<1	<1	<1	<2	<1	<LOR	<10	<50	<100	<100	<0.01	0.003	0.0017	0.001	0.003	0.004	<0.00005	0.087	0.12	<0.2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.003	0.0017	0.001	0.003	0.004	ND	0.087	0.12	ND
Average Concentration	0.5	0.5	0.5	1	0.5	-	5	25	50	50	0.005	0.00092	0.00049	0.00075	0.0014	0.0011	0.000025	0.02	0.037	0.1
Median Concentration	0.5	0.5	0.5	1	0.5	-	5	25	50	50	0.005	0.0005	0.0002	0.00075	0.001	0.0005	0.000025	0.0055	0.014	0.1
Standard Deviation	0	0	0	0	0	-	0	0	0	0	0	0.001	0.00062	0.00027	0.00092	0.0014	0	0.033	0.048	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	3	0

Assessment levels taken from:

ANZECC (2000) Australian and New Zealand Guidelines for Marine Water Quality (95% Protection Levels)

NSW Environmental Protection Agency (EPA) Service Station Guidelines (1994)

Notes:

* There are currently no guidelines for Chromium (III + VI). The Chromium VI criteria was therefore adopted for total Chromium

^ In the absence of guidelines for Marine water, Freshwater criteria has been adopted

ND Non-Detect

LOR Limit of reporting

0.1 Highlighted indicates concentration is above the ANZECC 2000 MW 95% Guidelines

0.1 Red indicates concentration is above the EPA 1994 Service Station Guidelines

	Organochlorine Pesticides																	Organophosphorous Pesticides									
	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	Chlordane (trans)	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	Bromophos-ethyl	Chlorpyrifos	Chlorpyrifos-methyl	Diazinon	Dimethoate	Ethion	Fenitrothion	Ronnel
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.0002	0.2	0.2	0.2	0.2	0.2
ANZECC 2000 MW 95%														0.008								0.009					
EPA 1994 Service Station - Marine Ecosystems																											

Field ID	Location	Date	Matrix	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
MW6	MW6	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
MW7	MW7	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
MW8	MW8	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
MW9	MW9	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2

Quality Control

DUP	MW6	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
RINSATE	-	3/04/2013	Water	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2

Statistical Summary

Number of Results	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.0002	<0.2	<0.2	<0.2	<0.2	<0.2
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0001	0.1	0.1	0.1	0.1	0.1
Median Concentration	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.0001	0.1	0.1	0.1	0.1	0.1
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	0	6	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Assessment levels taken from:

ANZECC (2000) Australian and New Zealand
NSW Environmental Protection Agency (EPA)

Notes:

- * There are currently no guidelines for Chromium (III + VI). The Chromium VI criteria was therefore adopted for total Chromium
- ^ In the absence of guidelines for Marine water, Freshwater criteria has been adopted
- ND Non-Detect
- LOR Limit of reporting
- 0.1 Highlighted indicates concentration is above the ANZECC 2000 MW 95% Guidelines
- 0.1 Red indicates concentration is above the EPA 1994 Service Station Guidelines

	PAH/Phenols																Polychlorinated Biphenyls							
	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAH	Arachlor 1016	Arachlor 1221	Arachlor 1232	Arachlor 1242	Arachlor 1248	Arachlor 1254	Arachlor 1260	
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	
EQL	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	
ANZECC 2000 MW 95%													50											
EPA 1994 Service Station - Marine Ecosystems																3								

[illegible][illegible]

Statistical Summary

[illegible]

Assessment levels taken from:

ANZECC (2000) Australian and New Zealand

NSW Environmental Protection Agency (EPA)

Notes:

- | | |
|-----|--|
| * | There are currently no guidelines for Chromium (III + VI). The Chromium VI criteria was therefore adopted for total Chromium |
| ^ | In the absence of guidelines for Marine water, Freshwater criteria has been adopted |
| ND | Non-Detect |
| LOR | Limit of reporting |

0.1 Highlighted indicates concentration is above the ANZECC 2000 MW 95% Guidelines

0.1 Red indicates concentration is above the EPA 1994 Service Station Guidelines

WSP Environmental Pty Ltd

Table 1. Soil RPDs

Field Duplicates (soil)
Filter: ALL

			SDG Field_ID Sampled_Date-Time	88207 BH09 26/03/2013	88207 QC1 26/03/2013	RPD	88207 BH01 27/03/2013	Interlab_D QC4 27/03/2013	RPD
Chem_Group	ChemName	Units	EQL						
BTEX	Benzene	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0
	Ethylbenzene	mg/kg	1 (Primary): 0.5 (Interlab)	<1.0	<1.0	0	<1.0	<0.5	0
	Toluene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Xylene (m & p)	mg/kg	2 (Primary): 0.5 (Interlab)	<2.0	<2.0	0	<2.0	<0.5	0
	Xylene (o)	mg/kg	1 (Primary): 0.5 (Interlab)	<1.0	<1.0	0	<1.0	<0.5	0
	C6-C10 less BTEX (F1)	mg/kg	25 (Primary): 10 (Interlab)	<25.0	<25.0	0	<25.0	<10.0	0
Halogenated Benzenes	Hexachlorobenzene	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
Inorganics	Moisture	%	0.1 (Primary): 1 (Interlab)	17.0	17.0	0	15.0	17.1	13
Lead	Lead	mg/kg	1 (Primary): 5 (Interlab)	21.0	19.0	10	16.0	22.0	32
Metals	Arsenic	mg/kg	4 (Primary): 5 (Interlab)	<4.0	<4.0	0	7.0	11.0	44
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<1.0	0
	Chromium (III+VI)	mg/kg	1 (Primary): 2 (Interlab)	10.0	19.0	62	20.0	21.0	5
	Copper	mg/kg	1 (Primary): 5 (Interlab)	35.0	30.0	15	15.0	28.0	60
	Mercury	mg/kg	0.1	0.1	0.2	67	0.1	<0.1	0
	Nickel	mg/kg	1 (Primary): 2 (Interlab)	11.0	23.0	71	6.0	8.0	29
	Zinc	mg/kg	1 (Primary): 5 (Interlab)	46.0	36.0	24	9.0	18.0	67
Organochlorine Pesticides	4,4-DDE	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	a-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Aldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	b-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlordane (cis)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlordane (trans)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	d-BHC	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	DDD	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	DDT	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
	Dieldrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan I	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan II	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endosulfan sulphate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endrin	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Endrin aldehyde	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	g-BHC (Lindane)	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Heptachlor	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Heptachlor epoxide	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Methoxychlor	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.2	0
Organophosphorous Pesticides	Bromophos-ethyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlorpyrifos	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Diazinon	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Dimethoate	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Ethion	mg/kg	0.1 (Primary): 0.05 (Interlab)	<0.1	<0.1	0	<0.1	<0.05	0
	Fenitrothion	mg/kg	0.1	<0.1	<0.1	0			
	Ronnel	mg/kg	0.1	<0.1	<0.1	0			
PAH/Phenols	Acenaphthene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0
	Acenaphthylene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0
	Anthracene	mg/kg	0.1 (Primary): 0.5 (Interlab)	0.5	0.5	0	<0.1	<0.5	0
	Benz(a)anthracene	mg/kg	0.1 (Primary): 0.5 (Interlab)	2.0	2.2	10	<0.1	<0.5	0
	Benzo(a) pyrene	mg/kg	0.05 (Primary): 0.5 (Interlab)	1.6	1.7	6	<0.05	<0.5	0
	Benzo(b)&(k)fluoranthene	mg/kg	0.2	3.3	3.7	11			
	Benzo(g,h,i)perylene	mg/kg	0.1 (Primary): 0.5 (Interlab)	1.3	0.9	36	<0.1	<0.5	0
	Chrysene	mg/kg	0.1 (Primary): 0.5 (Interlab)	1.7	2.2	26	<0.1	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.1 (Primary): 0.5 (Interlab)	0.2	0.2	0	<0.1	<0.5	0
	Fluoranthene	mg/kg	0.1 (Primary): 0.5 (Interlab)	5.4	6.3	15	<0.1	<0.5	0
	Fluorene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.1 (Primary): 0.5 (Interlab)	1.8	0.9	67	<0.1	<0.5	0
	Naphthalene	mg/kg	1 (Primary): 0.5 (Interlab)	<1.0	<1.0	0	<1.0	<0.5	0
	Naphthalene	mg/kg	0.1 (Primary): 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.5	0
	Phenanthrene	mg/kg	0.1 (Primary): 0.5 (Interlab)	2.7	3.5	26	<0.1	<0.5	0
	Phenolics Total	mg/kg	5	<5.0	<5.0	0			
	Pyrene	mg/kg	0.1 (Primary): 0.5 (Interlab)	5.0	6.0	18	<0.1	<0.5	0
Polychlorinated Biphenyls	Arochlor 1016	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1221	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1232	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1242	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1248	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1254	mg/kg	0.1	<0.1	<0.1	0			
	Arochlor 1260	mg/kg	0.1	<0.1	<0.1	0			
TPH	C6 - C9	mg/kg	25 (Primary): 10 (Interlab)	<25.0	<25.0	0	<25.0	<10.0	0
	C10 - C14	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	C15 - C28	mg/kg	100	<100.0	170.0	52	<100.0	<100.0	0
	C29-C36	mg/kg	100	190.0	210.0	10	<100.0	<100.0	0
	C6-C10	mg/kg	25 (Primary): 10 (Interlab)	<25.0	<25.0	0	<25.0	<10.0	0

*RPDs have only been considered where a concentration is greater than 0 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (0-5 x EQL); 75 (5-10 x EQL); 30 (> 10 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

WSP Environmental Pty Ltd
Table 5. Groundwater RPDs

Field Duplicates (water)
Filter: ALL

SDG	88399	88399	
Field_ID	MW6	DUP	RPD
Date	3/04/2013	3/04/2013	

Chem_Group	ChemName	Units	EQL			
BTEX	Benzene	µg/L	1	<1.0	<1.0	0
	Ethylbenzene	µg/L	1	<1.0	<1.0	0
	Toluene	µg/L	1	<1.0	<1.0	0
	Xylene (m & p)	µg/L	2	<2.0	<2.0	0
	Xylene (o)	µg/L	1	<1.0	<1.0	0
	C6-C10 less BTEX (F1)	mg/l	0.01	<0.01	<0.01	0
Halogenated Benzenes	Hexachlorobenzene	µg/L	0.2	<0.2	<0.2	0
Lead	Lead (Filtered)	mg/l	0.001	<0.001	<0.001	0
Metals	Arsenic (Filtered)	mg/l	0.001	<0.001	<0.001	0
	Cadmium (Filtered)	mg/l	0.0001	0.0002	0.0002	0
	Chromium (III+VI) (Filtered)	mg/l	0.001	<0.001	<0.001	0
	Copper (Filtered)	mg/l	0.001	0.001	0.001	0
	Mercury (Filtered)	mg/l	0.00005	<0.0001	<0.0001	0
	Nickel (Filtered)	mg/l	0.001	0.003	0.003	0
	Zinc (Filtered)	mg/l	0.001	0.006	0.009	40
Organochlorine Pesticides	4,4-DDE	µg/L	0.2	<0.2	<0.2	0
	a-BHC	µg/L	0.2	<0.2	<0.2	0
	Aldrin	µg/L	0.2	<0.2	<0.2	0
	b-BHC	µg/L	0.2	<0.2	<0.2	0
	Chlordane (cis)	µg/L	0.2	<0.2	<0.2	0
	Chlordane (trans)	µg/L	0.2	<0.2	<0.2	0
	d-BHC	µg/L	0.2	<0.2	<0.2	0
	DDD	µg/L	0.2	<0.2	<0.2	0
	DDT	µg/L	0.2	<0.2	<0.2	0
	Dieldrin	µg/L	0.2	<0.2	<0.2	0
	Endosulfan I	µg/L	0.2	<0.2	<0.2	0
	Endosulfan II	µg/L	0.2	<0.2	<0.2	0
	Endosulfan sulphate	µg/L	0.2	<0.2	<0.2	0
	Endrin	µg/L	0.2	<0.2	<0.2	0
	Endrin aldehyde	µg/L	0.2	<0.2	<0.2	0
	g-BHC (Lindane)	µg/L	0.2	<0.2	<0.2	0
	Heptachlor	µg/L	0.2	<0.2	<0.2	0
	Heptachlor epoxide	µg/L	0.2	<0.2	<0.2	0
	Methoxychlor	µg/L	0.2	<0.2	<0.2	0
Organophosphorous Pesticides	Bromophos-ethyl	µg/L	0.2	<0.2	<0.2	0
	Chlorpyrifos	µg/L	0.2	<0.2	<0.2	0
	Chlorpyrifos-methyl	mg/l	0.0002	<0.0002	<0.0002	0
	Diazinon	µg/L	0.2	<0.2	<0.2	0
	Dimethoate	µg/L	0.2	<0.2	<0.2	0
	Ethion	µg/L	0.2	<0.2	<0.2	0
	Fenitrothion	µg/L	0.2	<0.2	<0.2	0
	Ronnel	µg/L	0.2	<0.2	<0.2	0
PAH/Phenols	Acenaphthene	µg/L	1	<1.0	<1.0	0
	Acenaphthylene	µg/L	1	<1.0	<1.0	0
	Anthracene	µg/L	1	<1.0	<1.0	0
	Benz(a)anthracene	µg/L	1	<1.0	<1.0	0
	Benzo(a) pyrene	µg/L	1	<1.0	<1.0	0
	Benzo(b)&(k)fluoranthene	µg/L	2	<2.0	<2.0	0
	Benzo(g,h,i)perylene	µg/L	1	<1.0	<1.0	0
	Chrysene	µg/L	1	<1.0	<1.0	0
	Dibenz(a,h)anthracene	µg/L	1	<1.0	<1.0	0
	Fluoranthene	µg/L	1	<1.0	<1.0	0
	Fluorene	µg/L	1	<1.0	<1.0	0
	Indeno(1,2,3-c,d)pyrene	µg/L	1	<1.0	<1.0	0
	Naphthalene	µg/L	1	<1.0	<1.0	0
	Naphthalene	µg/L	1	<1.0	<1.0	0
	Phenanthrene	µg/L	1	<1.0	<1.0	0
	Pyrene	µg/L	1	<1.0	<1.0	0
Polychlorinated Biphenyls	Arochlor 1016	µg/L	2	<2.0	<2.0	0
	Arochlor 1221	µg/L	2	<2.0	<2.0	0
	Arochlor 1232	µg/L	2	<2.0	<2.0	0
	Arochlor 1242	µg/L	2	<2.0	<2.0	0
	Arochlor 1248	µg/L	2	<2.0	<2.0	0
	Arochlor 1254	µg/L	2	<2.0	<2.0	0
	Arochlor 1260	µg/L	2	<2.0	<2.0	0
TPH	C6 - C9	µg/L	10	<10.0	<10.0	0
	C10 - C14	µg/L	50	<50.0	<50.0	0
	C15 - C28	µg/L	100	<100.0	<100.0	0
	C29-C36	µg/L	100	<100.0	<100.0	0
	C6-C10	mg/l	0.01	<0.01	<0.01	0

*RPDs have only been considered where a concentration is greater than 0 times the EQL.

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (0-5 x EQL); 75 (5-10 x EQL); 30 (> 10 x EQL))

***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories.

Any methods in the row header relate to those used in the primary laboratory

PID Calibration Certificate

Instrument **PhoCheck Tiger**
 Serial No. **T-105523**

Air-Met Scientific Pty Ltd
 1300 137 067

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6 ev			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm		
Software	Version	✓				
Data logger	Operation	✓				
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		99ppm Isobutylene	NATA	971SY		99.4ppm

Calibrated by: *SB.* Sophie Boler

Calibration date: 25/03/2013

Next calibration due: 24/04/2013

Date	27-3-13
Job No.	00037445 00037445-01
Personnel	J Milner
Signature	<i>[Signature]</i>
Zero Calibration Reading	0.0 ppm
Calibration Gas	Isobutylene
Desired Span Calibration Reading	100.0 ppm
Gas Reading After Calibration	100.0 ppm

Comments

Multi Parameter Water Meter



airmet

 Air-Met Scientific Pty Ltd
 1300 137 067

 Instrument YSI Quatro Pro Plus
 Serial No. 13C100783

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		KD1212	pH 6.99
2. pH 10.00		pH 10.00		JH1569	pH 9.94
3. pH 4.00		pH 4.00		JJ1765	pH 4.03
4. mV		227.4mV		KA1583/KA1584	227.4mV
5. EC		2.76mS		JL2250	2.76mS
6. D.O		0 ppm		386	0.01ppm
7. Temp		23.6°C		MultiTherm	23.5°C

Calibrated by:

Jacob Arnott

Calibration date:

28/03/2013

Next calibration due:

24/09/2013



Groundwater - Well Sampling Data Form

Job Information	
Date: 3/04/2013	Time: arrive depart
Project Name: Goodman	Project Number: 37445
Site Location: corner sk.	Operator: A M
Well ID: MW 6	Weather: heavy rain / cloudy

Equipment	
Water quality equipment description: WQM	
Interface probe number: 20	
Purging equipment: (please circle)	Bailer type: Plastic Teflon Pump type: Peristaltic Submersible Micro-purge Amazon Other: Greppowd

Well Gauging and Purge Volume Calculations									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well / V = $\pi r^2 \times h$ V = volume in litres P = 3.14159 r = radius in cm h = height of water column in cm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3	
Total Well Depth (-) Water level (=) Water Column 7.02 m (-) 3.04 m (=) 3.98 m									
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume 3.98 m (x) 1.96 (=) 7.8 L									

Water Quality Parameters									
Beginning purge time:								Ending purge time:	
Litres	Time	Depth to Water (mbTOC)	pH	Temp°C	Cond mS/cm	DO ppm	Redox mV	Comments	
1			6.44	21.4	1925	1.84	95.7	cloudy - no odour	
2			6.43	21.2	1925	1.35	72.7	"	
4		3.38	6.40	21.2	1927	1.20	68	"	
8		3.30	6.41	21.2	1927	1.32	87.2	"	
16		3.23	6.39	21.1	1927	1.25	95.3	"	
24		3.21	6.40	21.2	1927	1.22	94.1	"	
Stabilisation Criteria									
+/- 0.05		+/- 10%		+/- 3%		+/- 10%		+/- 10%	
Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour									
Total Well Volume									
Actual amount of water prior to sampling									
24 L									
Did field parameters stabilise? Y N NA									
Was the well dry purged? Y N									

Field QC Checks	
Was pre-cleaning sampling equipment used for these samples?	Y N
Was pre-cleaning sampling equipment properly protected from contamination?	Y N
Was documentation of equipment conducted?	Y N NA
Were air bubbles present in vials at time of collection?	Y N NA
Was sample for metals field filtered prior to preservations?	Y N NA
Duplicate sample collected?	Y N

Duplicate sample ID: Dup + Trip



Groundwater - Well Sampling Data Form

Job Information	
Date: 3/04/2013	Time: arrive depart
Project Name: Goodman	Project Number: 37445
Site Location: Carter Street	Operator: AM
Well ID: MW7	Weather:

Equipment	
Water quality equipment description: WQM	
Interface probe number: 2P	
Purging equipment: (please circle)	Bailer type: Plastic Teflon Pump type: Peristaltic Submersible Micro-purge Amazon Other: Geoprobe

Well Gauging and Purge Volume Calculations									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well / V = $\pi r^2 \times h$ V = volume in litres P = 3.14159 r = radius in cm h = height of water column in cm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3	
Total Well Depth (-) Water level (=) Water Column 6.36 m (-) 1.35 m (=) 5.01 m									
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume 5.01 m (x) 1.96 (=) 9.83 L									

Water Quality Parameters								
Beginning purge time:							Ending purge time:	
Litres	Time	Depth to Water (mbTOC)	pH	Temp°C	Cond mS/cm	DO ppm	Redox mV	Comments
1		1.35	6.13	24.4	16584	2.93	88.6	clear - no odour
2		1.37	6.13	24.4	16387	2.88	89.1	"
3		2.19	6.13	24.4	16909	2.84	89.4	"
6		2.80	5.98	24.8	16796	2.83	108.4	Brown - cloudy - no odour
10		2.85	5.87	25.3	16692	3.51	115.	"
20		3.76	5.78	24.9	16588	3.95	120.8	"
Stabilisation Criteria		+/- 0.05	+/- 10%	+/- 3%	+/- 10%	+/- 10%	Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour	
20 L		Total Well Volume Actual amount of water prior to sampling					*pH, temp, cond readings not necessary if well is purged dry	
Did field parameters stabilise?					Y	N	NA	Was the well dry purged?
					Y	N	NA	

Field QC Checks			
Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID



Groundwater - Well Sampling Data Form

Job Information	
Date: <u>3/04/2013</u>	Time: arrive _____ depart _____
Project Name: <u>Greenman</u>	Project Number: <u>37445</u>
Site Location: <u>Canter Street</u>	Operator: <u>AM</u>
Well ID: <u>mw 8</u>	Weather: <u>Rainy - cloudy</u>

Equipment	
Water quality equipment description: <u>WQM</u>	
Interface probe number: <u>2D.</u>	
Purging equipment: (please circle)	Bailer type: <u>Plastic</u> Teflon Pump type: <u>Peristaltic</u> Submersible Micro-purge Amazon Other: <u>Gregor</u>

Well Gauging and Purge Volume Calculations									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well / V = $\pi r^2 \times h$ V = volume in litres P = 3.14159 r = radius in cm h = height of water column in cm
Conversion Factor (volume in factor L/m)	0.98	<u>1.96</u>	7.85	31.4	49.1	70.7	125.7	196.3	
Total Well Depth (-) Water level (=) Water Column <u>6.04</u> m (-) <u>1.43</u> m (=) <u>4.61</u> m Water Column (x) Conversion Factor (=) Litres per 1 Well Volume <u>4.61</u> m (x) <u>1.96</u> (=) <u>9.03</u> L									

Water Quality Parameters									
Beginning purge time:								Ending purge time:	
Litres	Time	Depth to Water (mbTOC)	pH	Temp°C	Cond mS/cm	DO ppm	Redox mV	Comments	
1			<u>6.28</u>	<u>22.4</u>	<u>2100</u>	<u>1.76</u>	<u>60.6</u>	<u>cloudy - brown/grey - slight odour</u>	
2			<u>6.30</u>	<u>22.4</u>	<u>2245</u>	<u>1.70</u>	<u>60.0</u>	<u>= no odour</u>	
3		<u>2.43</u>	<u>6.31</u>	<u>22.5</u>	<u>2108</u>	<u>1.34</u>	<u>59.1</u>	<u>= no odour</u>	
9		<u>2.78</u>	<u>6.33</u>	<u>22.6</u>	<u>2207</u>	<u>2.56</u>	<u>54.6</u>	<u>= no odour</u>	
18		<u>2.58</u>	<u>6.34</u>	<u>22.7</u>	<u>2190</u>	<u>3.21</u>	<u>52.4</u>	<u>clear to cloudy - no odour</u>	
27		<u>2.80</u>	<u>6.34</u>	<u>22.4</u>	<u>2095</u>	<u>3.97</u>	<u>52.6</u>	<u>=</u>	
Stabilisation Criteria: pH +/- 0.3, Temp +/- 0.3°C, Cond +/- 10%, DO +/- 0.2 ppm, Redox +/- 10 mV. Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour									
Total Well Volume: _____ Actual amount of water prior to sampling: _____									
Did field parameters stabilise? ☐ Y ☐ N ☐ NA Was the well dry purged? ☐ Y ☐ N									

Field QC Checks			
Was pre-cleaning sampling equipment used for these samples?	Y	N	
Was pre-cleaning sampling equipment properly protected from contamination?	Y	N	
Was documentation of equipment conducted?	Y	N	NA
Were air bubbles present in vials at time of collection?	Y	N	NA
Was sample for metals field filtered prior to preservations?	Y	N	NA
Duplicate sample collected?	Y	N	Duplicate sample ID



Groundwater - Well Sampling Data Form

Job Information	
Date: <u>3/04/13</u>	Time: arrive _____ depart _____
Project Name: <u>Goodman</u>	Project Number: <u>37 372 3745</u>
Site Location: <u>Center St</u>	Operator: <u>Am</u>
Well ID: <u>MW 9</u>	Weather: <u>Rain / cloudy / cold</u>

Equipment	
Water quality equipment description: <u>WQM</u>	
Interface probe number: <u>20</u>	
Purging equipment: (please circle)	Bailer type: Plastic Teflon Pump type: Peristaltic Submersible Micro-purge Amazon Other: <u>Greenshoe</u>

Well Gauging and Purge Volume Calculations									
Casing Diameter	25mm	50mm	100mm	125mm	150mm	200mm	250mm	300mm	Volume of water in well / V = $\pi r^2 \times h$ V = volume in litres P = 3.14159 r = radius in cm h = height of water column in cm
Conversion Factor (volume in factor L/m)	0.98	1.96	7.85	31.4	49.1	70.7	125.7	196.3	
Total Well Depth (-) Water level (=) Water Column <u>5.56</u> m (-) <u>3.71</u> m (=) <u>1.85</u> m									
Water Column (x) Conversion Factor (=) Litres per 1 Well Volume <u>1.85</u> m (x) <u>1.96</u> (=) <u>3.626</u> L									

Water Quality Parameters									
Beginning purge time:								Ending purge time:	
Litres	Time	Depth to Water (mbTOC)	pH	Temp°C	Cond mS/cm	DO ppm	Redox mV	Comments	
1			5.48	21.8	3487	3.37	64.3	cloudy - brown - no odour.	
2		3.70	5.47	21.8	3473	3.51	62.6	-	
3		4.62	5.50	21.8	3438	3.48	61.8	=	
7		5.13	5.52	21.7	3463	3.32	59.9	=	
11									
Stabilisation Criteria		+/- 0.05	+/- 10%	+/- 3%	+/- 10%	+/- 10%	Example Comments: clear / slightly cloudy / turbid / very turbid / no odour / slight odour / odour / strong odour		
7L		Total Well Volume Actual amount of water prior to sampling					*pH, temp. cond readings not necessary if well is purged dry		
Did field parameters stabilise?					Y	N	NA	Was the well dry purged?	
					Y	N	NA		

Field QC Checks	
Was pre-cleaning sampling equipment used for these samples?	Y N
Was pre-cleaning sampling equipment properly protected from contamination?	Y N
Was documentation of equipment conducted?	Y N NA
Were air bubbles present in vials at time of collection?	Y N NA
Was sample for metals field filtered prior to preservations?	Y N NA
Duplicate sample collected?	Y N
Duplicate sample ID	

Borehole Log		Hole ID.	BH01
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 4.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320451
Logged By: Josie Milner		Northing: 6252694	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests			Observations / Comments
									PID ppm	ID No.	DUP TRIP QC	
Solid Stem Auger		0.03				Fill	ASPHALT. FILL - Gravelly CLAY with minor ash inclusions, light grey / orange / red, fine angular gravel, ironstone inclusions.	dry	0.0	BH01_0.2		No odour.
		0.5							0.0	BH01_0.5	QC4	QC4 PID = 0.1
		0.70										
		1.0					CLAY with Gravels - light grey / orange, very stiff.	dry	0.0	BH01_1.0		No odour.
		1.5										
		2.0							0.1	BH01_2.0		
	2.5											
	3.0								0.2	BH01_3.0		
	3.30						Extremely Weathered SILTSTONE - dark grey, fine to medium grained.	dry				No odour.
	3.5											
	4.00								0.4	BH01_4.0		
							End of Hole at 4.00 m					

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	Concrete Cored (CC) through Asphalt.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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Borehole Log		Hole ID. BH02	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 5.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
Drill Method: Solid Stem Auger		Easting: 320293	
Logged By: Josie Milner		Northing: 6252798	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
							Grass on surface.				
Solid Stem Auger		0.5				Fill	FILL - Gravelly CLAY with red ironstone inclusions, light grey / orange / red, fine to medium angular gravel. Ash inclusions from 0.2 to 0.6mbg.	dry	0.0	BH02_0.2	No odour.
		1.0							0.0	BH02_0.5	
		1.30							0.0	BH02_1.0	
		1.5					CLAY with Gravels - light grey / orange, very stiff, fine angular red ironstone gravel.	damp			No odour.
		2.0							0.0	BH02_2.0	
		2.5									
		3.0							0.1	BH02_3.0	
		3.5									
		4.0									
		4.30					Extremely Weathered SILTSTONE - light grey / orange, fine to medium grained.	dry			No odour.
		4.5									
		5.00							0.0	BH02_5.0	
							End of Hole at 5.00 m				

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	No groundwater encountered during drilling.	
 Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au		Checked By: Josie Milner Date: 15/04/2013

Borehole Log		Hole ID.	BH03
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 2.40 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Solid Stem Auger		Easting: 320309
Logged By: Josie Milner		Northing: 6252844	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
							Grass on surface.				
Solid Stem Auger		0.5				Fill	FILL - Gravelly CLAY, orange / red / light grey, firm, fine angular gravel.	moist	0.1	BH03_0.2	No odour.
		0.0	BH03_0.5								
		0.1	BH03_1.0								
		0.0	BH03_2.0								
		2.10					moist			FILL - Sandy Gravelly CLAY, predominantly fine grained sand.	
	2.40					End of Hole at 2.40 m Hole abandoned due to irregular fill potentially associated with deeper underground service.					
		2.5									
		3.0									
		3.5									
		4.0									

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	
Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013

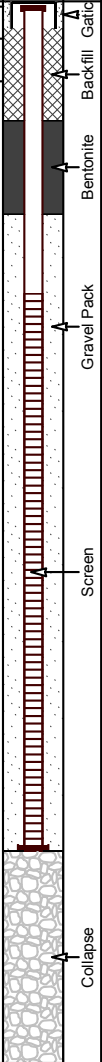
Borehole Log		Hole ID.	BH04
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 8.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320362
Logged By: Josie Milner		Northing: 6252828	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
CC		0.19					CONCRETE.				
		0.40					FILL - Lime Stabilised Gravelly CLAY, dark grey, fine angular gravel.	damp	0.21	BH04_0.3	No odour.
							FILL - Gravelly CLAY, light grey / orange / red, very stiff, ironstone inclusions.	damp	0.3	BH04_0.5	No odour.
		1.0							0.2	BH04_1.0	
		2.0							0.1	BH04_2.0	
		3.0					Dark grey / black / orange / red from 3.0 to 4.1mbg, soft to firm, with ash inclusions.	moist	0.4	BH04_3.0	
		4.0							0.6	BH04_4.0	No odour.
		4.10					CLAY with Ironstone Gravels - light grey / orange / red, very stiff.	moist			
		5.0							0.4	BH04_5.0	
		6.0									
		6.70					Extremely Weathered SILTSTONE - dark grey.	dry	0.3	BH04_7.0	No odour.
		7.0									
		8.00					End of Hole at 8.00 m				

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013
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Monitoring Well Log		Hole ID.	BH05/MW07
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name:	Land Capability Assessment	Date Started: 26/03/2013
	Project Number:	37445.01	Date Completed: 26/03/2013
	Location / Site:	Carter Street Precinct, Homebush Bay NSW	Hole Depth: 8.00 m
	Client:	Goodman Group	Ground Level: -----
	Drilling Company:	HartGeo Pty Ltd	Top of Casing: -----
	Drill Method:	Concrete Core / Solid Stem Auger	Easting: 320412
	Logged By:	Josie Milner	Northing: 6253014

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments	Well Details	Well Construction
									PID ppm	ID No.			
CC		0.04 0.28 0.60				Fill	ASPHALT. FILL - Lime Stabilised Cement with Gravel. FILL - CLAY, mottled grey / brown / red, very stiff. Weathered SHALE - light grey / orange, fine to medium grained.	wet due to cc dry	0.0	BH05_0.5	No odour. No odour. No odour.		
		1.0			Natural			0.1	BH05_1.0				
		2.0						0.0	BH05_2.0				
		3.0						2.4	BH05_3.0				
		4.0						13.6	BH05_4.0				
		5.0						38.2	BH05_5.0				
		6.0						8.1	BH05_6.0				
		7.0											
		8.00											
							End of Hole at 8.00 m						

Observations	Notes
Asbestos	CC = Concrete Coring. Developed 27/3/13. Approximately 20L purged dry.
Staining	
Odour	
Groundwater	

WSP LOG LT CARTER STREET PRECINCT 37445.GPJ WSP.GDT 15/4/13 3:16:40 PM

Borehole Log		Hole ID.	BH07
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 2.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320463
Logged By: Josie Milner		Northing: 6252999	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
Solid Stem Auger		0.08		[Symbol]		Fill	ASPHALT.				
		0.2		[Symbol]		Fill	FILL - Lime Stabilised Gravelly CLAY, dark grey, fine angular gravel.	dry	0.1	BH07_0.2	No odour.
		0.30		[Symbol]		CL	CLAY with Ironstone Gravels - light grey / red, very stiff, subrounded to angular gravel.	dry			No odour.
		0.50		[Symbol]			Extremely Weathered SILTSTONE - orange / grey, fine to medium grained.	dry	0.1	BH07_0.5	No odour.
		2.00		[Symbol]		Natural			0.0	BH07_1.0	
							End of Hole at 2.00 m				
		2.2									
		2.4									

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring. Developed 27/3/13. Approximately 20L purged dry.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013
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WSP LOG LT CARTER STREET PRECINCT 37445.GPJ WSP_GDT 15/4/13 3:16:41 PM

Borehole Log		Hole ID.	BH08														
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	<table style="width: 100%;"> <tr> <td style="width: 33%;">Project Name: Land Capability Assessment</td> <td style="width: 33%;">Date Started: 27/03/2013</td> </tr> <tr> <td>Project Number: 37445.01</td> <td>Date Completed: 27/03/2013</td> </tr> <tr> <td>Location / Site: Carter Street Precinct, Homebush Bay NSW</td> <td>Hole Depth: 2.00 m</td> </tr> <tr> <td>Client: Goodman Group</td> <td>Ground Level: -----</td> </tr> <tr> <td>Drilling Company: HartGeo Pty Ltd</td> <td>Top of Casing: -----</td> </tr> <tr> <td>Drill Method: Concrete Core / Solid Stem Auger</td> <td>Easting: 320559</td> </tr> <tr> <td>Logged By: Josie Milner</td> <td>Northing: 6253048</td> </tr> </table>			Project Name: Land Capability Assessment	Date Started: 27/03/2013	Project Number: 37445.01	Date Completed: 27/03/2013	Location / Site: Carter Street Precinct, Homebush Bay NSW	Hole Depth: 2.00 m	Client: Goodman Group	Ground Level: -----	Drilling Company: HartGeo Pty Ltd	Top of Casing: -----	Drill Method: Concrete Core / Solid Stem Auger	Easting: 320559	Logged By: Josie Milner	Northing: 6253048
Project Name: Land Capability Assessment	Date Started: 27/03/2013																
Project Number: 37445.01	Date Completed: 27/03/2013																
Location / Site: Carter Street Precinct, Homebush Bay NSW	Hole Depth: 2.00 m																
Client: Goodman Group	Ground Level: -----																
Drilling Company: HartGeo Pty Ltd	Top of Casing: -----																
Drill Method: Concrete Core / Solid Stem Auger	Easting: 320559																
Logged By: Josie Milner	Northing: 6253048																

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
CC		0.07				Fill	ASPHALT.				
Solid Stem Auger		0.2				Fill	FILL - Lime Stabilised Gravelly CLAY, grey, fine angular gravel.	dry	0.0	BH08_0.2	No odour.
		0.30									
		0.4					Extremely Weathered SILTSTONE - orange / grey, fine to medium grained.	dry	0.0	BH08_0.5	No odour.
		0.6									
		0.8									
		1.0							0.1	BH08_1.0	
		1.2									
		1.4									
		1.6									
		1.8									
		2.00									
							End of Hole at 2.00 m				
		2.2									
		2.4									

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring.

 Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013
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Borehole Log		Hole ID.	BH09
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 26/03/2013
	Project Number: 37445.01		Date Completed: 26/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 2.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
Drill Method: Concrete Core / Solid Stem Auger		Easting: 320203	Northing: 6252935
Logged By: Josie Milner			

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests			Observations / Comments
									PID ppm	ID No.	DUP TRIP QC	
Solid Stem Auger		0.03		ASPHALT.		Fill	FILL - Lime Stabilised Gravelly CLAY, brown / orange, fine angular gravel.	dry	0.3	BH09_0.2	QC1	No odour. QC1 PID = 0.1
		0.40		CLAY		CL	CLAY - grey / orange, firm.	damp	0.1	BH09_0.5		No odour.
		0.80		SHALE		Natural	Weathered SHALE - light grey / orange, fine to medium grained.	dry	0.0	BH09_1.0		No odour.
		2.00							0.1	BH09_2.0		
		2.2					End of Hole at 2.00 m					
		2.4										

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013
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Borehole Log		Hole ID. BH10	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 26/03/2013
	Project Number: 37445.01		Date Completed: 26/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 2.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320503
Logged By: Josie Milner		Northing: 6253179	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
CC		0.09					ASPHALT.				
		0.2				Fill	FILL - Lime Stabilised Cement with Gravel, fine angular gravel.	dry	0.4	BH10_0.2	Concrete odour.
		0.45				CL	CLAY - light grey / orange, very stiff.	dry	0.1	BH10_0.5	No odour.
		0.60				Natural	Weathered SHALE - light grey / orange, fine to medium grained.	dry	1.0	BH10_1.0	No odour.
Solid Stem Auger		1.0									
		1.2									
		1.4									
		1.6									
		1.8									
		2.00					End of Hole at 2.00 m				
		2.2									
		2.4									

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling.	CC = Concrete Coring.
Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater No groundwater encountered during drilling.	

	Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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Monitoring Well Log		Hole ID. BH11/MW09
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment	Date Started: 26/03/2013
	Project Number: 37445.01	Date Completed: 26/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW	Hole Depth: 6.00 m
	Client: Goodman Group	Ground Level: -----
	Drilling Company: HartGeo Pty Ltd	Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger	Easting: 320378
Logged By: Josie Milner	Northing: 6253314	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments	Well Details	Well Construction
									PID ppm	ID No.			
		0.08				Fill	ASPHALT. FILL - Lime Stabilised Gravelly CLAY, grey / brown, fine angular gravel.	dry			No odour.		
		0.55				Fill	FILL - CLAY, light grey / red, firm.	dry	1.4	BH11_0.5	No odour.		
		0.80					Weathered SHALE - light grey / orange, fine to medium grained.	dry	0.1	BH11_0.7	No odour.		
		1.0							0.1	BH11_1.0	No odour.		
		2.0							0.0	BH11_2.0	No odour.		
		2.20					CLAY - light grey / orange / red, firm.	damp			No odour.		
		3.0				Natural			0.0	BH11_3.0			
		3.5m					Very dark grey / orange / dark brown from 3.5mbg, very soft.	moist					
		4.0				CL			0.1	BH11_4.0			
		5.0					Light grey / orange / red from 4.3mbg, very stiff.		0.5	BH11_5.0			
		6.00							0.1	BH11_6.0			
							End of Hole at 6.00 m						

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling.	CC = Concrete Coring. Developed 27/3/13. Approximately 20L purged dry.
Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater Groundwater encountered during drilling.	

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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WSP LOG LT CARTER STREET PRECINCT 37445.GPJ WSP_GDT 15/4/13 3:16:45 PM

Borehole Log		Hole ID. BH12	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 4.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
Drill Method: Concrete Core / Solid Stem Auger		Easting: 320283	
Logged By: Josie Milner		Northing: 6253231	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests			Observations / Comments
									PID ppm	ID No.	DUP TRIP QC	
CC		0.13					CONCRETE.					
Solid Stem Auger	27m 27/03/2013	0.5					FILL - Gravelly CLAY with red ironstone inclusions, light grey / orange / red, stiff, fine angular gravel.	moist	0.3	BH12_0.2	QC3	QC3 PID = 0.3 No odour.
		1.0							0.5	BH12_0.5		
		1.5							0.5	BH12_1.0		
		1.90										
		2.0					CLAY with Ironstone Gravels - light grey / orange / red, stiff.	moist	0.4	BH12_2.0		No odour.
		2.5						wet				
		3.0							0.4	BH12_3.0		
		3.50					Silty CLAY - dark grey / orange.	wet				Organic odour.
		4.00							0.8	BH12_4.0		SPOCAS analysis at BH12_4.0
							End of Hole at 4.00 m					

Observations		Notes
Asbestos	No visual evidence of asbestos noted during drilling.	CC = Concrete Coring. SPOCAS = Suspension Peroxide Oxidation Combined Acidity & Sulfur.
Staining	No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour	No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater	Groundwater encountered during drilling.	
 Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au		Checked By: Josie Milner Date: 15/04/2013

Borehole Log		Hole ID. BH13	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 8.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320232
Logged By: Josie Milner		Northing: 6253220	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
CC		0.22					ASPHALT.				
						Fill	FILL - Gravelly CLAY with red ironstone inclusions, light grey / orange / red, very stiff, fine angular gravel.	dry	0.4	BH13_0.5	No odour.
		1.0							0.2	BH13_1.0	
		1.80				CL	CLAY with red Ironstone Gravels - light grey / orange, very stiff.	dry	0.8	BH13_2.0	No odour.
		2.0							0.6	BH13_3.0	
		3.0							1.0	BH13_4.0	
		4.0					Light grey / black / orange at 4.0 to 4.1mbg, soft.	wet			
		5.0									
		6.0									
		7.0									
		7.80									
		8.00					Extremely Weathered SHALE - dark grey.	wet			No odour.
							End of Hole at 8.00 m				

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling.	CC = Concrete Coring.
Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater Groundwater encountered during drilling.	

	Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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Borehole Log		Hole ID. BH14	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 4.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320378
Logged By: Josie Milner		Northing: 6253185	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
CC		0.07					ASPHALT. FILL - Lime Stabilised Gravelly CLAY, grey / brown, fine to medium angular gravel.	dry	0.8	BH14_0.2	No odour.
		0.40					FILL - CLAY with ironstone inclusions, predominantly red / orange, minor light grey, very stiff.	damp	0.1	BH14_0.5	No odour.
		0.5									
		1.0							0.1	BH14_1.0	
		1.5									
		2.0							0.1	BH14_2.0	
		2.5									
		2.70									
		3.0					Extremely Weathered SILTSTONE - light grey / orange.	dry	0.0	BH14_3.0	No odour.
		3.5									
		4.00					End of Hole at 4.00 m				

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling.	CC = Concrete Coring.
Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater No groundwater encountered during drilling.	

	Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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Borehole Log		Hole ID.	BH15
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 6.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320216
Logged By: Josie Milner		Northing: 6253092	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests			Observations / Comments
									PID ppm	ID No.	DUP TRIP QC	
CC		0.14				Fill	CONCRETE.					
		0.40				Fill	FILL - Lime Stabilised Gravelly CLAY, grey / brown, fine angular gravel.	dry	0.0	BH15_0.2	QC2	No odour.
		1.00				ML	FILL - Gravelly CLAY with ironstone inclusions, light grey / orange / red, stiff.	damp	0.0	BH15_0.5	QC2	QC2 PID = 0.0 No odour.
		1.40				ML	Clayey SILT - dark brown, soft.	moist	0.2	BH15_1.0		Organic H ₂ S odour.
		2.0				CL	CLAY with Gravels - light grey / orange / red, very stiff, minor ironstone gravel inclusions.	damp	0.4	BH15_1.3		SPOCAS analysis at BH15_1.3
		3.0				CL			0.2	BH15_2.0		No odour.
		4.0				CL			0.1	BH15_3.0		
		5.0				CL			0.1	BH15_4.0		
		5.20					Extremely Weathered SILTSTONE - grey / orange.	damp				No odour.
		6.00					End of Hole at 6.00 m					

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring. SPOCAS = Suspension Peroxide Oxidation Combined Acidity & Sulfur.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner Date: 15/04/2013
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Monitoring Well Log		Hole ID. BH17/MW08	
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment	Date Started: 26/03/2013	
	Project Number: 37445.01	Date Completed: 26/03/2013	
	Location / Site: Carter Street Precinct, Homebush Bay NSW	Hole Depth: 6.50 m	
	Client: Goodman Group	Ground Level: -----	
	Drilling Company: HartGeo Pty Ltd	Top of Casing: -----	
	Drill Method: Concrete Core / Solid Stem Auger	Easting: 320095	
Logged By: Josie Milner		Northing: 6253009	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments	Well Details	Well Construction
									PID ppm	ID No.			
CC		0.20				Fill	CONCRETE.						
		0.40					FILL - Lime Stabilised Gravelly CLAY, dark grey, fine to medium angular gravel.	damp to moist	0.0	BH17_0.3	No odour.		
							CLAY - light grey / orange, minor dark brown, very stiff, minor ironstone gravel inclusions.	damp to moist	0.0	BH17_0.5	No odour.		
		1.0							0.0	BH17_1.0			
		2.0				CL			0.0	BH17_2.0			
		3.0							0.0	BH17_3.0			
		3.30				Natural	Extremely Weathered SILTSTONE - light grey / orange.	dry			No odour.		
		4.0							0.0	BH17_4.0			
		5.0					Predominantly dry from 5.0m.		0.4	BH17_5.0			
		6.0							2.0	BH17_6.0			
		6.50					End of Hole at 6.50 m						
		7.0											

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring. Developed 27/3/13. Approximately 10L purged dry.

Log Drawn By: Laurie White Contact: laurie.white@reumad.com.au	Checked By: Josie Milner	Date: 15/04/2013
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Borehole Log		Hole ID. BH19	
 WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com 	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 8.00 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Solid Stem Auger		Easting: 320158
Logged By: Josie Milner		Northing: 6252914	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments
									PID ppm	ID No.	
							Grass on surface.				
		0.70				Fill	FILL - Gravelly CLAY, light grey / red.	dry	0.1	BH19_0.2	No odour.
		1.0				CL	CLAY with Gravels - light grey / red / orange, very stiff.	dry	0.2	BH19_0.5	
		2.0							0.1	BH19_1.0	No odour.
		3.0					Red / orange from 2.6mbg.		0.2	BH19_2.0	
		4.0					Light grey / orange from 3.2mbg.	damp to moist	0.4	BH19_4.0	
		5.0									
		6.0					Ironstone gravels from 5.2 to 5.5mbg.				
		7.0						wet			
		7.60					Extremely Weathered SILTSTONE - dark grey.	wet	0.3	BH19_8.0	No odour.
		8.00					End of Hole at 8.00 m				

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling.	
Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling.	
Odour No olfactory (e.g. odour) evidence of contamination noted during drilling.	
Groundwater Groundwater encountered during drilling.	



Log Drawn By: Laurie White
Contact: laurie.white@reumad.com.au

Checked By: **Josie Milner**

Date: **15/04/2013**

Borehole Log		Hole ID. BH20/MW06	
WSP Environment & Energy Level 1, 41 McLaren Street North Sydney NSW 2060 Office: +61 (0)2 8925 6700 www.wspenvironmental.com	Project Name: Land Capability Assessment		Date Started: 27/03/2013
	Project Number: 37445.01		Date Completed: 27/03/2013
	Location / Site: Carter Street Precinct, Homebush Bay NSW		Hole Depth: 7.30 m
	Client: Goodman Group		Ground Level: -----
	Drilling Company: HartGeo Pty Ltd		Top of Casing: -----
	Drill Method: Concrete Core / Solid Stem Auger		Easting: 320214
Logged By: Josie Milner		Northing: 6252854	

Method	Water Level	Depth (m)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Samples / Tests		Observations / Comments	Well Details	Well Construction
									PID ppm	ID No.			
Solid Stem Auger		0.07				Fill	ASPHALT.	dry			No odour.		Gatic Backfill Bentonite Gravel Pack Screen Collapse
		0.30				Fill	FILL - Lime Stabilised Gravelly CLAY, light grey / red, fine angular gravel.	dry	0.1	BH20_0.5	No odour.		
		0.70				CL	FILL - Gravelly CLAY, light grey / red, minor fine angular inclusions.	dry	0.2	BH20_1.0	No odour.		
		1.0					CLAY with Gravels - red / orange / grey, very stiff.		0.2	BH20_2.0			
		2.0							0.2	BH20_3.0			
		3.0							0.2	BH20_4.0			
		4.0						damp	0.3	BH20_5.0			
		5.0						damp	0.3	BH20_6.0	No odour.		
		6.00					Extremely Weathered SILTSTONE - dark grey.						
		7.30					End of Hole at 7.30 m						

Observations	Notes
Asbestos No visual evidence of asbestos noted during drilling. Staining No visual evidence of contamination (e.g. staining / precipitate) noted during drilling. Odour No olfactory (e.g. odour) evidence of contamination noted during drilling. Groundwater No groundwater encountered during drilling.	CC = Concrete Coring. Developed 27/3/13. Approximately 20L purged dry.



Log Drawn By: Laurie White
 Contact: laurie.white@reumad.com.au

Checked By: **Josie Milner**

Date: **15/04/2013**

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Lana Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No.:	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required:	
Phone: (02) 8925 6700 Fax:	Or choose: <u>standard</u> 1 day / 2 day / 3 day	
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Sample Information				Tests Required										Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo 8a		HOLD	TPH (C-Ca)	BTEX						Provide as much information about the sample as you can
1	BH01-0.2	27.3.13	Soil			✓								
2	BH01-0.5	↓	↓	✓		✓								
3	BH01-1.0	↓	↓			✓								
4	BH01-2.0	↓	↓			✓								
5	BH01-3.0	↓	↓			✓								
6	BH01-4.0	↓	↓			✓								
7	QC1	26.3.13	Soil	✓		✓								
8	QC2	"	↓			✓								
9	QC3	27.3.13	↓			✓								
10	QC4	"	↓	✓		→								
11	TB		↓			✓								
12	TS		↓			✓								

Relinquished by (company): WSP	Received by (company): ELS	Samples Received: Cool or Ambient (circle one)
Print Name: Josie Milner	Print Name: D. Kordantko	Temperature Received at: (if applicable)
Date & Time: 28.3.13	Date & Time: 28.3.13	Transported by: Hand delivered / courier
Signature: [Signature]	Signature: [Signature]	Page No: 1 of 7

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Lana Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No. :	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required: Or choose: <u>standard</u> 1 day / 2 day / 3 day Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone: (02) 8925 6700	Fax:	

Sample information				Tests Required										Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo	Asbestos	PAH	TPH	BTEX	OC/OP/PCB	Phenolics				Provide as much information about the sample as you can
12	BH20-3.0	27-3-13	Soil											
13	BH20-4.0													
14	BH20-5.0													
15	BH20-6.0													
16	BH19-0.2			✓										
17	BH19-0.5													
18	BH19-1.0													
19	BH19-2.0													
20	BH19-4.0													
21	BH19-8.0													
22	BH12 BH12-0.2													
23	BH12-0.5													
24	BH12-1.0			✓										
25	BH12-2.0													
26	BH12-3.0													

Relinquished by (company): WSP	Received by (company): ELS	Samples Received: Cool or Ambient (circle one)
Print Name: Josie Milner	Print Name: D. Kondawala	Temperature Received at: (if applicable)
Date & Time: 28-3-13 10am	Date & Time: 28-3-13	Transported by: Hand delivered / courier
Signature: <i>[Signature]</i>	Signature: <i>[Signature]</i>	Page No: 2 of 7

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	EnviroLab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Land Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	EnviroLab Services Quote No.:	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required:	
Phone: (02) 8925 6700	Fax:	
	Or choose: <u>standard</u> 1 day / 2 day / 3 day	
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Sample Information				Tests Required										Comments
EnviroLab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo 8a	SPCAS	HOLD								Provide as much information about the sample as you can
27	BH12-4.0	27.3.13	Soil		✓									
28	BH13-0.5			✓										
29	BH13-1.0					✓								
30	BH13-2.0					✓								
31	BH13-3.0					✓								
32	BH13-4.0					✓								
33	BH04-0.3			✓										
34	BH04-0.5					✓								
35	BH04-1.0					✓								
36	BH04-2.0					✓								
37	BH04-3.0					✓								
38	BH04-4.0			✓										
39	BH04-5.0													
40	BH04-7.0													
41	BH03-0.2			✓										

Relinquished by (company): WSP	Received by (company): ELS	Samples Received: Cool or Ambient (circle one)
Print Name: Josie Milner	Print Name: D. Kordowska	Temperature Received at: (if applicable)
Date & Time: 28.3.13 10am	Date & Time: 28.3.13	Transported by: Hand delivered / courier
Signature: [Signature]	Signature: [Signature]	Page No: 3 of 7

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Lana Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No.:	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required:	
Phone: (02) 8925 6700	Fax:	
Or choose: <u>standard</u> 1 day / 2 day / 3 day		
Note: Inform lab in advance if urgent turnaround is required - surcharge applies		

Sample Information				Tests Required												Comments	
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo 8a		HOLD											Provide as much information about the sample as you can
42	BH03-0.5	27.3.13	Soil			✓											
43	BH03-1.0					✓											
44	BH03-2.0					✓											
45	BH07-0.2			✓		✓											
46	BH07-0.5					✓											
47	BH07-1.0					✓											
48	BH08-0.2			✓		✓											
49	BH08-0.5					✓											
50	BH08-1.0					✓											
51	BH02-0.2					✓											
52	BH02-0.5			✓		✓											
53	BH02-1.0					✓											
54	BH02-2.0					✓											
55	BH02-3.0					✓											
56	BH02-5.0					✓											

Combo 8a = MS, PAH, TPH, BTEX, CCP/OPP/PCB, Phenolics

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

Job No: 88207

Date Received: 28.3.13

Time Received:

Received by: [Signature]

Temp: Cool/Ambient

Condition: Intact/Broken/None

Relinquished by (company): WSP

Print Name: Josie Milner

Date & Time: 28.3.13 10am

Signature: [Signature]

Received by (company): ELS

Print Name: D. Kondaske

Date & Time: 28.3.13

Signature: [Signature]

Samples Received: Cool or Ambient (circle one)

Temperature Received at: (if applicable)

Transported by: Hand delivered / courier

Page No: 4 of 7

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: 00037445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Land Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No. :	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required:	
Phone: (02) 8925 6700	Fax:	
	Or choose: <u>standard</u> 1 day / 2 day / 3 day	
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Sample Information				Tests Required												Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo 8a		HOLD										Provide as much information about the sample as you can
57	BH05-0.5	26.3.13	Soil	✓												
58	BH05-1.0					✓										
59	BH05-2.0					✓										
60	BH05-3.0					✓										
61	BH05-4.0					✓										
62	BH05-5.0					✓										
63	BH05-6.0					✓										
64	BH09-0.2			✓												
65	BH09-0.5					✓										
66	BH09-1.0					✓										
67	BH09-2.0					✓										
68	BH10-0.2					✓										
69	BH10-0.5			✓												
70	BH10-1.0					✓										
71	BH11-0.5	✓	✓			✓										

Relinquished by (company): WSP	Received by (company): ELS	Samples Received: Cool or Ambient (circle one)
Print Name: Josie Milner	Print Name: D. Kowalska	Temperature Received at: (if applicable)
Date & Time: 28.3.13 10am	Date & Time: 28.3.13	Transported by: Hand delivered / courier
Signature: [Signature]	Signature: [Signature]	Page No: 5 of 7

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Lana Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No.:	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required:	
Phone: (02) 8925 6700	Fax:	
	Or choose: <u>standard</u> 1 day / 2 day / 3 day	
	Note: Inform lab in advance if urgent turnaround is required - surcharge applies	

Sample Information				Tests Required												Comments		
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo 8a														Provide as much information about the sample as you can
72	BH11-0.7	26.3.13	Soil	✓														Asbestos PAH TPH BTEX OCP/OPP/PCB Phenolics Combo 8a = MB
73	BH11-1.0																	
74	BH11-2.0																	
75	BH11-3.0																	
76	BH11-4.0																	
77	BH11-5.0																	
78	BH11-6.0																	
79	BH14-0.2																	
80	BH14-0.5																	
81	BH14-1.0																	
82	BH14-2.0			✓														
83	BH14-3.0																	
84	BH15-0.2			✓														
85	BH15-0.5																	
86	BH15-1.0			✓														
Relinquished by (company): WSP				Received by (company): ELS												Samples Received: Cool or Ambient (circle one)		
Print Name: Josie Milner				Print Name: D. Kordowski												Temperature Received at: (if applicable)		
Date & Time: 28.3.13 10am				Date & Time: 28.3.13												Transported by: Hand delivered / courier		
Signature: [Signature]				Signature: [Signature]												Page No: 6 of 7		

CHAIN OF CUSTODY - Client



ENVIROLAB SERVICES

Client: WSP	Client Project Name and Number: CCO37445.01	Envirolab Services 12 Ashley St, Chatswood, NSW, 2067 Phone: 02 9910 6200 Fax: 02 9910 6201 E-mail: ahie@envirolabservices.com.au Contact: Aileen Hie
Project Mgr: Graeme Malpass	Lana Capability Assessment	
Sampler: Josie Milner	PO No.:	
Address: Level 1, 41 McLaren Street North Sydney	Envirolab Services Quote No. :	
Email: josie.milner AND graeme.malpass@wspgroup.com	Date results required: Or choose: <u>standard</u> 1 day / 2 day / 3 day Note: Inform lab in advance if urgent turnaround is required - surcharge applies	
Phone: (02) 8925 6700	Fax:	

Sample Information				Tests Required												Comments
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo Ba	SPACAS	HOLD										Provide as much information about the sample as you can
87	BH15-1.3	26.3.13	Soil		✓											
88	BH15-2.0					✓										
89	BH15-3.0					✓										
90	BH15-4.0					✓										
91	BH17-0.3			✓												
92	BH17-0.5					✓										
93	BH17-1.0					✓										
94	BH17-2.0					✓										
95	BH17-3.0					✓										
96	BH17-4.0					✓										
97	BH17-5.0					✓										
98	BH17-6.0	↓	↓			✓										
99	BH20-0.5	27.3.13	↓	✓		✓										
100	BH20-1.0	↓	↓			✓										
101	BH20-2.0	↓	↓			✓										

Relinquished by (company): WSP	Received by (company): ELS	Samples Received: Cool or Ambient (circle one)
Print Name: Josie Milner	Print Name: D. Kordowich	Temperature Recieved at: (if applicable)
Date & Time: 28.3.13 10am	Date & Time: 28.3.13	Transported by: Hand delivered / courier
Signature:	Signature:	Page No: 7 of 7

SAMPLE RECEIPT ADVICE

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700

Fax: 8925 6799

Attention: Graeme Malpass, Josie Milner

Sample log in details:

Your reference:

00037445.01, Land Capability Assessment

Envirolab Reference:

88207

Date received:

28/03/13

Date results expected to be reported:

8/04/13

Samples received in appropriate condition for analysis:	YES
No. of samples provided	101 soils
Turnaround time requested:	Standard
Temperature on receipt	Cool
Cooling Method:	Ice Pack
Sampling Date Provided:	YES

Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst

ph: 02 9910 6200 fax: 02 9910 6201

email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

CERTIFICATE OF ANALYSIS

88207

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Graeme Malpass, Josie Milner

Sample log in details:

Your Reference:	<u>00037445.01, Land Capability Assessment</u>		
No. of samples:	101 soils		
Date samples received / completed instructions received	28/03/13	/	28/03/13

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

Report Details:

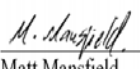
Date results requested by: / Issue Date:	8/04/13	/	8/04/13
Date of Preliminary Report:	Not issued		

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

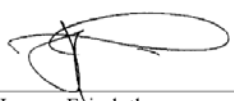
Results Approved By:


Rhian Morgan
Reporting Supervisor


Nick Sarlamis
Inorganics Supervisor


Matt Mansfield
Approved Signatory


Alex MacLean
Chemist


Jeremy Faircloth
Chemist

vTRH(C6-C10)/BTEXN in Soil	UNITS	88207-2	88207-7	88207-10	88207-11	88207-16
Our Reference:	-----	BH01	QC1	TB	TS	BH19
Your Reference	-----	0.5	-	-	-	0.2
Depth		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	[NA]	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	[NA]	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	[NA]	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	100%	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	101%	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	98%	<1
m+p-xylene	mg/kg	<2	<2	<2	98%	<2
o-Xylene	mg/kg	<1	<1	<1	98%	<1
naphthalene	mg/kg	<1	<1	<1	[NA]	<1
Surrogate aaa-Trifluorotoluene	%	90	82	85	99	83

vTRH(C6-C10)/BTEXN in Soil	UNITS	88207-24	88207-28	88207-33	88207-38	88207-41
Our Reference:	-----	BH12	BH13	BH04	BH04	BH03
Your Reference	-----	1.0	0.5	0.3	4.0	0.2
Depth		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	63	103	78	78

vTRH(C6-C10)/BTEXN in Soil	UNITS	88207-45	88207-48	88207-52	88207-57	88207-64
Our Reference:	-----	BH07	BH08	BH02	BH05	BH09
Your Reference	-----	0.2	0.2	0.5	0.5	0.2
Depth		27/03/2013	27/03/2013	27/03/2013	26/03/2013	26/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	83	83	82	90	79

vTRH(C6-C10)/BTEXN in Soil	UNITS	88207-69	88207-72	88207-82	88207-84	88207-86
Our Reference:	-----	BH10	BH11	BH14	BH15	BH15
Your Reference	-----	0.5	0.7	2.0	0.2	1.0
Depth		26/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
TRHC ₆ - C ₉	mg/kg	<25	<25	<25	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25	<25	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
naphthalene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	66	80	79	83	83

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	88207-91	88207-99
Your Reference	-----	BH17	BH20
Depth	-----	0.3	0.5
Date Sampled		26/03/2013	27/03/2013
Type of sample		Soil	Soil
Date extracted	-	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013
TRHC ₆ - C ₉	mg/kg	<25	<25
TRHC ₆ - C ₁₀	mg/kg	<25	<25
vTPHC ₆ - C ₁₀ less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	94	96

svTRH (C10-C40) in Soil	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Our Reference:	-----	BH01	QC1	BH19	BH12	BH13
Your Reference	-----	0.5	-	0.2	1.0	0.5
Depth		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	170	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	210	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	290	100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	190	<100	<100	<100
Surrogate o-Terphenyl	%	108	137	109	104	110

svTRH (C10-C40) in Soil	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Our Reference:	-----	BH04	BH04	BH03	BH07	BH08
Your Reference	-----	0.3	4.0	0.2	0.2	0.2
Depth		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Date Sampled		Soil	Soil	Soil	Soil	Soil
Type of sample						
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	120	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	290	260
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	310	260
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	290	340
Surrogate o-Terphenyl	%	108	103	107	108	118

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	190	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	210	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	170	<100	<100
Surrogate o-Terphenyl	%	102	107	110	105	108

svTRH (C10-C40) in Soil						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	mg/kg	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	mg/kg	<100	<100	<100	<100	<100
TRH>C ₁₀ -C ₁₆	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	<50	<50	<50	<50	<50
TRH>C ₁₆ -C ₃₄	mg/kg	<100	<100	<100	<100	<100
TRH>C ₃₄ -C ₄₀	mg/kg	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	107	76	105	109	106

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-2 BH01 0.5 27/03/2013 Soil	88207-7 QC1 - 26/03/2013 Soil	88207-16 BH19 0.2 27/03/2013 Soil	88207-24 BH12 1.0 27/03/2013 Soil	88207-28 BH13 0.5 27/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	3.5	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	0.5	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	6.3	0.8	<0.1	<0.1
Pyrene	mg/kg	<0.1	6.0	0.7	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	2.2	0.2	<0.1	<0.1
Chrysene	mg/kg	<0.1	2.2	0.3	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	3.7	0.6	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	1.7	0.27	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.9	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.9	0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	mg/kg	<0.5	3.0	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	105	89	93	109	103

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-33 BH04 0.3 27/03/2013 Soil	88207-38 BH04 4.0 27/03/2013 Soil	88207-41 BH03 0.2 27/03/2013 Soil	88207-45 BH07 0.2 27/03/2013 Soil	88207-48 BH08 0.2 27/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Fluoranthene	mg/kg	0.3	<0.1	<0.1	0.2	1.3
Pyrene	mg/kg	0.3	<0.1	<0.1	0.2	1.3
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.1	0.5
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	0.8
Benzo(a)pyrene	mg/kg	0.1	<0.05	<0.05	0.09	0.44
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.1	0.4
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	0.3
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5	<0.5	<0.5	1
Surrogate p-Terphenyl-d14	%	101	101	103	98	108

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-52 BH02 0.5 27/03/2013 Soil	88207-57 BH05 0.5 26/03/2013 Soil	88207-64 BH09 0.2 26/03/2013 Soil	88207-69 BH10 0.5 26/03/2013 Soil	88207-72 BH11 0.7 26/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	2.7	<0.1	0.1
Anthracene	mg/kg	<0.1	<0.1	0.5	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	5.4	0.1	0.3
Pyrene	mg/kg	<0.1	<0.1	5.0	0.1	0.3
Benzo(a)anthracene	mg/kg	<0.1	<0.1	2.0	<0.1	0.1
Chrysene	mg/kg	<0.1	<0.1	1.7	<0.1	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	3.3	<0.2	0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	1.6	<0.05	0.13
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	1.8	<0.1	0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	0.2	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	1.3	<0.1	0.1
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5	3.0	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	109	109	83	105	107

PAHs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-82 BH14 2.0 26/03/2013 Soil	88207-84 BH15 0.2 26/03/2013 Soil	88207-86 BH15 1.0 26/03/2013 Soil	88207-91 BH17 0.3 26/03/2013 Soil	88207-99 BH20 0.5 27/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	03/04/2013	03/04/2013	03/04/2013	03/04/2013	03/04/2013
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene TEQ	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Surrogate p-Terphenyl-d14	%	117	74	106	112	104

Organochlorine Pesticides in soil						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	90	94	98	99

Organochlorine Pesticides in soil						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	97	96	90	99

Organochlorine Pesticides in soil						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	82	103	109

Organochlorine Pesticides in soil						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	69	97	99	97

Organophosphorus Pesticides						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	90	94	98	99

Organophosphorus Pesticides						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	98	97	96	90	99

Organophosphorus Pesticides						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	101	98	82	103	109

Organophosphorus Pesticides						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyrifos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	97	69	97	99	97

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-2 BH01 0.5 27/03/2013 Soil	88207-7 QC1 - 26/03/2013 Soil	88207-16 BH19 0.2 27/03/2013 Soil	88207-24 BH12 1.0 27/03/2013 Soil	88207-28 BH13 0.5 27/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	90	94	98	99

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-33 BH04 0.3 27/03/2013 Soil	88207-38 BH04 4.0 27/03/2013 Soil	88207-41 BH03 0.2 27/03/2013 Soil	88207-45 BH07 0.2 27/03/2013 Soil	88207-48 BH08 0.2 27/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	98	97	96	90	99

PCBs in Soil Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-52 BH02 0.5 27/03/2013 Soil	88207-57 BH05 0.5 26/03/2013 Soil	88207-64 BH09 0.2 26/03/2013 Soil	88207-69 BH10 0.5 26/03/2013 Soil	88207-72 BH11 0.7 26/03/2013 Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	101	98	82	103	109

PCBs in Soil						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	97	69	97	99	97

Total Phenolics in Soil						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Date analysed	-	02/04/2013	02/04/2013	02/04/2013	02/04/2013	02/04/2013
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Acid Extractable metals in soil						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	2/4/2013	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date analysed	-	3/4/2013	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Arsenic	mg/kg	7	<4	5	8	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	20	19	32	7	6
Copper	mg/kg	15	30	15	34	11
Lead	mg/kg	16	19	21	14	11
Mercury	mg/kg	0.1	0.2	<0.1	<0.1	<0.1
Nickel	mg/kg	6	23	17	10	<1
Zinc	mg/kg	9	36	36	46	3

Acid Extractable metals in soil						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	2/4/2013	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date analysed	-	3/4/2013	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Arsenic	mg/kg	7	13	5	6	<4
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	0.6
Chromium	mg/kg	18	26	16	19	10
Copper	mg/kg	14	18	15	23	19
Lead	mg/kg	24	19	13	22	17
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	5	3	10	17	8
Zinc	mg/kg	44	51	16	170	27

Acid Extractable metals in soil						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	2/4/2013	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date analysed	-	3/4/2013	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Arsenic	mg/kg	<4	<4	<4	<4	5
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	11	2	10	4	17
Copper	mg/kg	9	28	35	9	38
Lead	mg/kg	8	7	21	7	9
Mercury	mg/kg	<0.1	<0.1	0.1	<0.1	0.1
Nickel	mg/kg	4	1	11	7	15
Zinc	mg/kg	6	4	46	4	21

Acid Extractable metals in soil						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	2/4/2013	2/4/2013	2/4/2013	2/4/2013	2/4/2013
Date analysed	-	3/4/2013	3/4/2013	3/4/2013	3/4/2013	3/4/2013
Arsenic	mg/kg	8	<4	14	<4	8
Cadmium	mg/kg	<0.4	<0.4	<0.4	<0.4	<0.4
Chromium	mg/kg	28	11	17	24	12
Copper	mg/kg	8	59	11	42	3
Lead	mg/kg	15	4	17	9	9
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	3	110	6	65	<1
Zinc	mg/kg	4	39	32	36	1

Acid Extractable metals in soil		
Our Reference:	UNITS	88207-102
Your Reference	-----	BH01 - TRIPLICATE
Depth	-----	0.5
Date Sampled		27/03/2013
Type of sample		Soil
Date digested	-	2/4/2013
Date analysed	-	3/4/2013
Arsenic	mg/kg	8
Cadmium	mg/kg	<0.4
Chromium	mg/kg	22
Copper	mg/kg	14
Lead	mg/kg	17
Mercury	mg/kg	<0.1
Nickel	mg/kg	5
Zinc	mg/kg	9

Moisture						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	02/04/13	02/04/13	02/04/13	02/04/13	02/04/13
Date analysed	-	03/04/13	03/04/13	03/04/13	03/04/13	03/04/13
Moisture	%	15	17	10	17	13

Moisture						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	02/04/13	02/04/13	02/04/13	02/04/13	02/04/13
Date analysed	-	03/04/13	03/04/13	03/04/13	03/04/13	03/04/13
Moisture	%	16	20	9.2	12	8.1

Moisture						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	02/04/13	02/04/13	02/04/13	02/04/13	02/04/13
Date analysed	-	03/04/13	03/04/13	03/04/13	03/04/13	03/04/13
Moisture	%	13	19	17	15	10

Moisture						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	02/04/13	02/04/13	02/04/13	02/04/13	02/04/13
Date analysed	-	03/04/13	03/04/13	03/04/13	03/04/13	03/04/13
Moisture	%	21	8.0	19	16	16

Asbestos ID - soils						
Our Reference:	UNITS	88207-2	88207-7	88207-16	88207-24	88207-28
Your Reference	-----	BH01	QC1	BH19	BH12	BH13
Depth	-----	0.5	-	0.2	1.0	0.5
Date Sampled		27/03/2013	26/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	5/04/2013	5/04/2013	5/04/2013	5/04/2013	5/04/2013
Sample mass tested	g	Approx 45g	Approx 45g	Approx 45g	Approx 45g	Approx 45g
Sample Description	-	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Pink fine-grained soil & rocks	Light brown fine-grained soil & rocks	Reddish brown coarse-grained soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils						
Our Reference:	UNITS	88207-33	88207-38	88207-41	88207-45	88207-48
Your Reference	-----	BH04	BH04	BH03	BH07	BH08
Depth	-----	0.3	4.0	0.2	0.2	0.2
Date Sampled		27/03/2013	27/03/2013	27/03/2013	27/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	5/04/2013	5/04/2013	5/04/2013	5/04/2013	5/04/2013
Sample mass tested	g	Approx 45g	Approx 45g	Approx 45g	Approx 45g	Approx 45g
Sample Description	-	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils						
Our Reference:	UNITS	88207-52	88207-57	88207-64	88207-69	88207-72
Your Reference	-----	BH02	BH05	BH09	BH10	BH11
Depth	-----	0.5	0.5	0.2	0.5	0.7
Date Sampled		27/03/2013	26/03/2013	26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	5/04/2013	5/04/2013	5/04/2013	5/04/2013	5/04/2013
Sample mass tested	g	Approx 45g	Approx 45g	Approx 45g	Approx 45g	Approx 45g
Sample Description	-	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Light brown fine-grained soil & rocks	Light grey fine-grained soil & rocks	Light brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils						
Our Reference:	UNITS	88207-82	88207-84	88207-86	88207-91	88207-99
Your Reference	-----	BH14	BH15	BH15	BH17	BH20
Depth	-----	2.0	0.2	1.0	0.3	0.5
Date Sampled		26/03/2013	26/03/2013	26/03/2013	26/03/2013	27/03/2013
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	5/04/2013	5/04/2013	5/04/2013	5/04/2013	5/04/2013
Sample mass tested	g	Approx 45g	Approx 45g	Approx 45g	Approx 45g	Approx 45g
Sample Description	-	Light brown fine-grained soil & rocks	Dark grey fine-grained soil & rocks	Dark brown fine-grained soil & rocks	Dark grey fine-grained soil & rocks	Light brown fine-grained soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

sPOCAS Our Reference: Your Reference Depth Date Sampled Type of sample	UNITS ----- -----	88207-27 BH12 4.0 27/03/2013 Soil	88207-87 BH15 1.3 26/03/2013 Soil
Date prepared	-	02/04/2013	02/04/2013
Date analysed	-	02/04/2013	02/04/2013
pH _{KCl}	pH units	4.3	5.4
TAA pH 6.5	moles H ⁺ /t	37	12
s-TAA pH 6.5	%w/w S	0.06	0.02
pH _α	pH units	4.8	4.7
TPA pH 6.5	moles H ⁺ /t	55	82
s-TPA pH 6.5	%w/w S	0.09	0.13
TSA pH 6.5	moles H ⁺ /t	17	70
s-TSA pH 6.5	%w/w S	0.03	0.11
ANCE	% CaCO ₃	<0.05	<0.05
a-ANCE	moles H ⁺ /t	<5	<5
s-ANCE	%w/w S	<0.05	<0.05
SKCl	%w/w S	<0.005	0.01
SP	% w/w	0.02	0.07
SPOS	% w/w	0.02	0.06
a-SPOS	moles H ⁺ /t	10	36
CaKCl	% w/w	0.03	0.10
CaP	% w/w	0.03	0.15
CaA	% w/w	0.009	0.042
MgKCl	% w/w	0.058	0.052
MgP	% w/w	0.061	0.077
MgA	% w/w	<0.005	0.024
SHCl	%w/w S	0.009	[NT]
SNAS	%w/w S	0.005	[NT]
a-SNAS	moles H ⁺ /t	<5	[NT]
s-SNAS	%w/w S	<0.01	[NT]
Fineness Factor	-	1.5	1.5
a-Net Acidity	moles H ⁺ /t	50	49
Liming rate	kg CaCO ₃ /t	3.8	3.7
a-Net Acidity without ANCE	moles H ⁺ /t	NA	NA
Liming rate without ANCE	kg CaCO ₃ /t	NA	NA

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Inorg-030	Total Phenolics - determined colorimetrically following disitillation, based upon APHA 22nd ED 5530 D.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 4 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-064	sPOCAS determined using titrimetric and ICP-AES techniques. Based on Acid Sulfate Soils Laboratory Methods Guidelines, Version 2.1 - June 2004.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXN in Soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-6	02/04/2013
Date analysed	-			04/04/2013	88207-2	04/04/2013 04/04/2013	LCS-6	04/04/2013
TRHC ₆ - C ₉	mg/kg	25	Org-016	<25	88207-2	<25 <25	LCS-6	118%
TRHC ₆ - C ₁₀	mg/kg	25	Org-016	<25	88207-2	<25 <25	LCS-6	118%
vTPHC ₆ - C ₁₀ less BTEX(F1)	mg/kg	25	Org-016	[NT]	88207-2	<25 <25	[NR]	[NR]
Benzene	mg/kg	0.2	Org-016	<0.2	88207-2	<0.2 <0.2	LCS-6	106%
Toluene	mg/kg	0.5	Org-016	<0.5	88207-2	<0.5 <0.5	LCS-6	113%
Ethylbenzene	mg/kg	1	Org-016	<1	88207-2	<1 <1	LCS-6	115%
m+p-xylene	mg/kg	2	Org-016	<2	88207-2	<2 <2	LCS-6	123%
o-Xylene	mg/kg	1	Org-016	<1	88207-2	<1 <1	LCS-6	128%
naphthalene	mg/kg	1	Org-014	<1	88207-2	<1 <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	87	88207-2	90 62 RPD: 37	LCS-6	106%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH (C10-C40) in Soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-5	02/04/2013
Date analysed	-			03/04/2013	88207-2	03/04/2013 03/04/2013	LCS-5	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	50	Org-003	<50	88207-2	<50 <50	LCS-5	90%
TRHC ₁₅ - C ₂₈	mg/kg	100	Org-003	<100	88207-2	<100 <100	LCS-5	85%
TRHC ₂₉ - C ₃₆	mg/kg	100	Org-003	<100	88207-2	<100 <100	LCS-5	94%
TRH>C ₁₀ -C ₁₆	mg/kg	50	Org-003	<50	88207-2	<50 <50	LCS-5	90%
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	50	Org-003	[NT]	88207-2	<50 <50	[NR]	[NR]
TRH>C ₁₆ -C ₃₄	mg/kg	100	Org-003	<100	88207-2	<100 <100	LCS-5	85%
TRH>C ₃₄ -C ₄₀	mg/kg	100	Org-003	<100	88207-2	<100 <100	LCS-5	94%
Surrogate o-Terphenyl	%		Org-003	101	88207-2	108 109 RPD: 1	LCS-5	97%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-5	02/04/2013
Date analysed	-			03/04/2013	88207-2	03/04/2013 03/04/2013	LCS-5	03/04/2013
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	91%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	93%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	98%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	98%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	104%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	LCS-5	86%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	88207-2	<0.2 <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	88207-2	<0.05 <0.05	LCS-5	93%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	0.5	Org-012 subset	[NT]	88207-2	<0.5 <0.5	[NR]	[NR]
Surrogate <i>p</i> -Terphenyl-d14	%		Org-012 subset	98	88207-2	105 103 RPD: 2	LCS-5	92%

Client Reference: 00037445.01, Land Capability Assessment

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organochlorine Pesticides in soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-6	02/04/2013
Date analysed	-			04/04/2013	88207-2	04/04/2013 04/04/2013	LCS-6	04/04/2013
HCB	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	85%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	91%
Heptachlor	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	91%
delta-BHC	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	85%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	97%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	83%
Dieldrin	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	94%
Endrin	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	82%
pp-DDD	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	81%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	LCS-6	91%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	97	88207-2	98 101 RPD: 3	LCS-6	92%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Organophosphorus Pesticides						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-6	02/04/2013
Date analysed	-			04/04/2013	88207-2	04/04/2013 04/04/2013	LCS-6	04/04/2013
Diazinon	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	LCS-6	91%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	LCS-6	98%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	88207-2	<0.1 <0.1	LCS-6	106%
Surrogate TCMX	%		Org-008	97	88207-2	98 101 RPD: 3	LCS-6	94%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-6	02/04/2013
Date analysed	-			04/04/2013	88207-2	04/04/2013 04/04/2013	LCS-6	04/04/2013
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	LCS-6	101%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	88207-2	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	97	88207-2	98 101 RPD: 3	LCS-6	93%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Total Phenolics in Soil						Base II Duplicate II %RPD		
Date extracted	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-1	02/04/2013
Date analysed	-			02/04/2013	88207-2	02/04/2013 02/04/2013	LCS-1	02/04/2013
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	88207-2	<5 <5	LCS-1	92%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Date digested	-			2/4/2013	88207-2	2/4/2013 2/4/2013	LCS-1	2/4/2013
Date analysed	-			3/4/2013	88207-2	3/4/2013 3/4/2013	LCS-1	3/4/2013
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	88207-2	7 9 RPD: 25	LCS-1	96%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	88207-2	<0.4 <0.4	LCS-1	96%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Acid Extractable metals in soil						Base II Duplicate II %RPD		
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	88207-2	20 21 RPD: 5	LCS-1	99%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	88207-2	15 27 RPD: 57	LCS-1	98%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	88207-2	16 18 RPD: 12	LCS-1	96%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	88207-2	0.1 <0.1	LCS-1	93%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	88207-2	6 10 RPD: 50	LCS-1	99%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	88207-2	9 15 RPD: 50	LCS-1	98%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank				
Moisture								
Date prepared	-			[NT]				
Date analysed	-			[NT]				
Moisture	%	0.1	Inorg-008	[NT]				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank				
Asbestos ID - soils								
Date analysed	-			[NT]				
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sPOCAS						Base II Duplicate II %RPD		
Date prepared	-			02/04/2013	[NT]	[NT]	LCS-1	02/04/2013
Date analysed	-			02/04/2013	[NT]	[NT]	LCS-1	02/04/2013
pH _{kcl}	pH units		Inorg-064	[NT]	[NT]	[NT]	LCS-1	99%
TAA pH 6.5	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	LCS-1	97%
s-TAA pH 6.5	% w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NR]	[NR]
pH _α	pH units		Inorg-064	[NT]	[NT]	[NT]	LCS-1	103%
TPA pH 6.5	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	LCS-1	104%
s-TPA pH 6.5	% w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NR]	[NR]
TSA pH 6.5	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	LCS-1	105%
s-TSA pH 6.5	% w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NR]	[NR]
ANCE	% CaCO ₃	0.05	Inorg-064	<0.05	[NT]	[NT]	[NR]	[NR]
a-ANCE	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	[NR]	[NR]
s-ANCE	% w/w S	0.05	Inorg-064	<0.05	[NT]	[NT]	[NR]	[NR]
SKCl	% w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	LCS-1	88%

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
sPOCAS						Base II Duplicate II %RPD		
SP	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	LCS-1	93%
SPOS	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	LCS-1	96%
a-SPOS	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	LCS-1	96%
CaKCl	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	LCS-1	95%
CaP	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
CaA	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
MgKCl	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	LCS-1	104%
MgP	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
MgA	% w/w	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
SHCl	% w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
SNAS	% w/w S	0.005	Inorg-064	<0.005	[NT]	[NT]	[NR]	[NR]
a-SNAS	moles H ⁺ /t	5	Inorg-064	<5	[NT]	[NT]	[NR]	[NR]
s-SNAS	% w/w S	0.01	Inorg-064	<0.01	[NT]	[NT]	[NR]	[NR]
Fineness Factor	-	1.5	Inorg-064	<1.5	[NT]	[NT]	[NR]	[NR]
a-Net Acidity	moles H ⁺ /t	10	Inorg-064	<10	[NT]	[NT]	LCS-1	96%
Liming rate	kg CaCO ₃ /t	0.75	Inorg-064	<0.75	[NT]	[NT]	LCS-1	95%
a-Net Acidity without ANCE	moles H ⁺ /t	10	Inorg-064	<10	[NT]	[NT]	[NR]	[NR]
Liming rate without ANCE	kg CaCO ₃ /t	0.75	Inorg-064	<0.75	[NT]	[NT]	[NR]	[NR]

QUALITYCONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	04/04/2013 04/04/2013	88207-7	04/04/2013
TRHC ₆ - C ₉	mg/kg	88207-48	<25 <25	88207-7	94%
TRHC ₆ - C ₁₀	mg/kg	88207-48	<25 <25	88207-7	94%
vTPHC ₆ - C ₁₀ less BTEX(F1)	mg/kg	88207-48	<25 <25	[NR]	[NR]
Benzene	mg/kg	88207-48	<0.2 <0.2	88207-7	84%
Toluene	mg/kg	88207-48	<0.5 <0.5	88207-7	90%
Ethylbenzene	mg/kg	88207-48	<1 <1	88207-7	92%
m+p-xylene	mg/kg	88207-48	<2 <2	88207-7	98%
o-Xylene	mg/kg	88207-48	<1 <1	88207-7	103%
naphthalene	mg/kg	88207-48	<1 <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%	88207-48	83 83 RPD: 0	88207-7	95%

Client Reference: 00037445.01, Land Capability Assessment

QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	03/04/2013 03/04/2013	88207-7	03/04/2013
TRHC ₁₀ - C ₁₄	mg/kg	88207-48	<50 <50	88207-7	100%
TRHC ₁₅ - C ₂₈	mg/kg	88207-48	<100 <100	88207-7	122%
TRHC ₂₉ - C ₃₆	mg/kg	88207-48	260 250 RPD: 4	88207-7	#
TRH>C ₁₀ -C ₁₆	mg/kg	88207-48	<50 <50	88207-7	100%
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	mg/kg	88207-48	<50 <50	[NR]	[NR]
TRH>C ₁₆ -C ₃₄	mg/kg	88207-48	260 230 RPD: 12	88207-7	122%
TRH>C ₃₄ -C ₄₀	mg/kg	88207-48	340 320 RPD: 6	88207-7	#
Surrogate o-Terphenyl	%	88207-48	118 118 RPD: 0	88207-7	113%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	03/04/2013 03/04/2013	88207-7	03/04/2013
Naphthalene	mg/kg	88207-48	<0.1 <0.1	88207-7	90%
Acenaphthylene	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Acenaphthene	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Fluorene	mg/kg	88207-48	<0.1 <0.1	88207-7	93%
Phenanthrene	mg/kg	88207-48	0.4 0.3 RPD: 29	88207-7	#
Anthracene	mg/kg	88207-48	0.1 0.1 RPD: 0	[NR]	[NR]
Fluoranthene	mg/kg	88207-48	1.3 0.8 RPD: 48	88207-7	#
Pyrene	mg/kg	88207-48	1.3 0.8 RPD: 48	88207-7	#
Benzo(a)anthracene	mg/kg	88207-48	0.5 0.4 RPD: 22	[NR]	[NR]
Chrysene	mg/kg	88207-48	0.4 0.3 RPD: 29	88207-7	#
Benzo(b+k)fluoranthene	mg/kg	88207-48	0.8 0.6 RPD: 29	[NR]	[NR]
Benzo(a)pyrene	mg/kg	88207-48	0.44 0.34 RPD: 26	88207-7	130%
Indeno(1,2,3-c,d)pyrene	mg/kg	88207-48	0.4 0.3 RPD: 29	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	88207-48	0.3 0.3 RPD: 0	[NR]	[NR]
Benzo(a)pyrene TEQ	mg/kg	88207-48	1 <0.5	[NR]	[NR]
Surrogate p-Terphenyl-d14	%	88207-48	108 110 RPD: 2	88207-7	92%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	04/04/2013 04/04/2013	88207-7	04/04/2013
HCB	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
alpha-BHC	mg/kg	88207-48	<0.1 <0.1	88207-7	81%
gamma-BHC	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
beta-BHC	mg/kg	88207-48	<0.1 <0.1	88207-7	88%
Heptachlor	mg/kg	88207-48	<0.1 <0.1	88207-7	88%
delta-BHC	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Aldrin	mg/kg	88207-48	<0.1 <0.1	88207-7	83%
Heptachlor Epoxide	mg/kg	88207-48	<0.1 <0.1	88207-7	94%
gamma-Chlordane	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Endosulfan I	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
pp-DDE	mg/kg	88207-48	<0.1 <0.1	88207-7	81%
Dieldrin	mg/kg	88207-48	<0.1 <0.1	88207-7	92%
Endrin	mg/kg	88207-48	<0.1 <0.1	88207-7	79%
pp-DDD	mg/kg	88207-48	<0.1 <0.1	88207-7	77%
Endosulfan II	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
pp-DDT	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	88207-48	<0.1 <0.1	88207-7	82%
Methoxychlor	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Surrogate TCMX	%	88207-48	99 92 RPD: 7	88207-7	92%

Client Reference: 00037445.01, Land Capability Assessment

QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	04/04/2013 04/04/2013	88207-7	04/04/2013
Diazinon	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Dimethoate	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos-methyl	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Ronnel	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Chlorpyrifos	mg/kg	88207-48	<0.1 <0.1	88207-7	90%
Fenitrothion	mg/kg	88207-48	<0.1 <0.1	88207-7	94%
Bromophos-ethyl	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Ethion	mg/kg	88207-48	<0.1 <0.1	88207-7	102%
Surrogate TCMX	%	88207-48	99 92 RPD: 7	88207-7	93%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-48	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-48	04/04/2013 04/04/2013	88207-7	04/04/2013
Arochlor 1016	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	88207-48	<0.1 <0.1	88207-7	100%
Arochlor 1260	mg/kg	88207-48	<0.1 <0.1	[NR]	[NR]
Surrogate TCLMX	%	88207-48	99 92 RPD: 7	88207-7	93%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	88207-52	02/04/2013 02/04/2013	88207-7	02/04/2013
Date analysed	-	88207-52	02/04/2013 02/04/2013	88207-7	02/04/2013
Total Phenolics (as Phenol)	mg/kg	88207-52	<5 <5	88207-7	88%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	88207-48	2/4/2013 2/4/2013	LCS-2	02/04/2013
Date analysed	-	88207-48	3/4/2013 3/4/2013	LCS-2	03/04/2013
Arsenic	mg/kg	88207-48	<4 <4	LCS-2	94%
Cadmium	mg/kg	88207-48	0.6 0.6 RPD: 0	LCS-2	94%
Chromium	mg/kg	88207-48	10 11 RPD: 10	LCS-2	96%
Copper	mg/kg	88207-48	19 29 RPD: 42	LCS-2	96%
Lead	mg/kg	88207-48	17 12 RPD: 34	LCS-2	93%
Mercury	mg/kg	88207-48	<0.1 <0.1	LCS-2	96%
Nickel	mg/kg	88207-48	8 9 RPD: 12	LCS-2	96%
Zinc	mg/kg	88207-48	27 34 RPD: 23	LCS-2	95%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	88207-7	02/04/2013
Date analysed	-	[NT]	[NT]	88207-7	03/04/2013
Arsenic	mg/kg	[NT]	[NT]	88207-7	87%
Cadmium	mg/kg	[NT]	[NT]	88207-7	80%
Chromium	mg/kg	[NT]	[NT]	88207-7	74%
Copper	mg/kg	[NT]	[NT]	88207-7	97%
Lead	mg/kg	[NT]	[NT]	88207-7	83%
Mercury	mg/kg	[NT]	[NT]	88207-7	84%
Nickel	mg/kg	[NT]	[NT]	88207-7	72%
Zinc	mg/kg	[NT]	[NT]	88207-7	81%

Report Comments:

PAH's in soil: # Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

TRHs in Soil (NEPM): # Percent recovery is not possible to report as the high concentration of analytes in the sample/s have caused interference.

Acid Extractable Metals in Soil: The laboratory RPD acceptance criteriae has been exceeded for 88207-2 for Cu, Ni, Zn. Therefore a triplicate result has been issued as laboratory sample number 88207-102.

Asbestos ID was analysed by Approved Identifier: Alex Tam
Asbestos ID was authorised by Approved Signatory: Lulu Guo

INS: Insufficient sample for this test
NA: Test not required
<: Less than

PQL: Practical Quantitation Limit
RPD: Relative Percent Difference
>: Greater than

NT: Not tested
NA: Test not required
LCS: Laboratory Control Sample

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

Aileen Hie

From: Milner, Josie [Josie.Milner@WSPGroup.com]
Sent: Tuesday, 9 April 2013 10:26 AM
To: Aileen Hie
Cc: Malpass, Graeme
Subject: Additional Analysis

Hi Aileen,

Can I please get the following additional TCLP analysis on Envirolab Job 88207 (WSP Reference 00037445.01)

BH15_0.2 (88207-84)	Nickel TCLP
BH17_0.3 (88207-91)	Nickel TCLP
QC1 (88207-7)	B(a)P TCLP

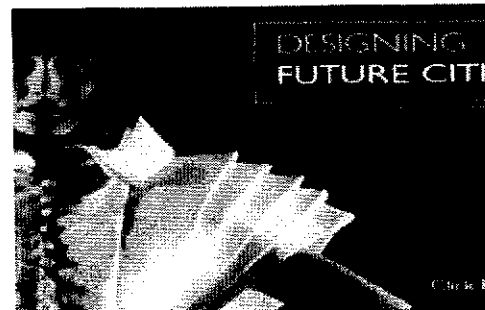
Thanks very much

Josie

Josie Milner

Environmental Engineer
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D. +61 2 8925 6721
M.+61 4 4897 7958
Josie.Milner@WSPGroup.com

www.wspgroup.com.au



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This email and all contents are subject to the following disclaimer. Please [click](#) here to read.

Envirolab Ref: 88207A

Due: 16/4/13

Std T/A.

CERTIFICATE OF ANALYSIS

88207-A

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Graeme Malpass, Josie Milner

Sample log in details:

Your Reference:	<u>00037445.01, Land Capability Assessment</u>
No. of samples:	Additional Testing on 3 Soils
Date samples received / completed instructions received	28/03/13 / 09/04/13

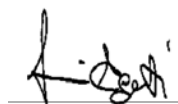
Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

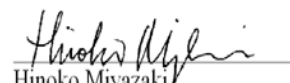
Report Details:

Date results requested by: / Issue Date: 16/04/13 / 16/04/13
Date of Preliminary Report: Not issued
NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:



Giovanni Agosti
Technical Manager



Hinoko Miyazaki
Chemist

Metals in TCLP USEPA 1311				
Our Reference:	UNITS	88207-A-7	88207-A-84	88207-A-91
Your Reference	-----	QC1	BH15	BH17
Depth	-----	-	0.2	0.3
Date Sampled		26/03/2013	26/03/2013	26/03/2013
Type of sample		Soil	Soil	Soil
Date extracted	-	10/04/2013	10/04/2013	10/04/2013
Date analysed	-	[NA]	10/04/2013	10/04/2013
pH of soil for fluid# determ.	pH units	8.8	9.9	9.3
pH of soil for fluid # determ. (acid)	pH units	1.8	1.7	1.7
Extraction fluid used	-	1	1	1
pH of final Leachate	pH units	9.0	5.0	5.0
Nickel in TCLP	mg/L	[NA]	0.2	0.1

PAHs in TCLP (USEPA 1311)		
Our Reference:	UNITS	88207-A-7
Your Reference	-----	QC1
Depth	-----	-
Date Sampled		26/03/2013
Type of sample		Soil
Date extracted	-	10/04/2013
Date analysed	-	10/04/2013
Naphthalene in TCLP	mg/L	<0.001
Acenaphthylene in TCLP	mg/L	<0.001
Acenaphthene in TCLP	mg/L	<0.001
Fluorene in TCLP	mg/L	<0.001
Phenanthrene in TCLP	mg/L	0.003
Anthracene in TCLP	mg/L	<0.001
Fluoranthene in TCLP	mg/L	<0.001
Pyrene in TCLP	mg/L	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001
Chrysene in TCLP	mg/L	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001
Surrogate <i>p</i> -Terphenyl-d14	%	104

Method ID	Methodology Summary
Inorg-004	Toxicity Characteristic Leaching Procedure (TCLP) using AS 4439 and USEPA 1311.
EXTRACT.7	Toxicity Characteristic Leaching Procedure (TCLP).
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA 22nd ED, 4500-H+.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Org-012 subset	Leachates are extracted with Dichloromethane and analysed by GC-MS.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
Metals in TCLP USEPA1311						Base II Duplicate II %RPD		
Date extracted	-			15/4/2013	[NT]	[NT]	LCS-W1	15/4/2013
Date analysed	-			15/4/2013	[NT]	[NT]	LCS-W1	15/4/2013
Nickel in TCLP	mg/L	0.02	Metals-020 ICP-AES	<0.02	[NT]	[NT]	LCS-W1	98%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in TCLP (USEPA 1311)						Base II Duplicate II %RPD		
Date extracted	-			10/04/2013	[NT]	[NT]	LCS-W3	10/04/2013
Date analysed	-			10/04/2013	[NT]	[NT]	LCS-W3	10/04/2013
Naphthalene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	89%
Acenaphthylene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Acenaphthene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluorene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	103%
Phenanthrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	98%
Anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Fluoranthene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	103%
Pyrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	104%
Benzo(a)anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Chrysene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	103%
Benzo(b+k)fluoranthene in TCLP	mg/L	0.002	Org-012 subset	<0.002	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	125%
Indeno(1,2,3-c,d)pyrene -TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	119	[NT]	[NT]	LCS-W3	93%

Report Comments:

Asbestos ID was analysed by Approved Identifier: Not applicable for this job
 Asbestos ID was authorised by Approved Signatory: Not applicable for this job

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

12 Ashley St, Chatswood, NSW, 2067

Contact: Aileen Hie

Telephone : + 61-2-8784 8555

Page No: 1 of 7

Environmental Division

CERTIFICATE OF ANALYSIS

Work Order	: ES1307537	Page	: 1 of 7
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR GRAEME MALPASS	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: graeme.malpass@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00037445 01 LAND CAPABILITY ASSESSMENT	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Order number	: ----	Date Samples Received	: 02-APR-2013
C-O-C number	: ----	Issue Date	: 09-APR-2013
Sampler	: JM	No. of samples received	: 1
Site	: ----	No. of samples analysed	: 1
Quote number	: EN/036/12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Descriptive Results
- Surrogate Control Limits



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.

LOR = Limit of reporting

^ = This result is computed from individual analyte detections at or above the level of reporting

- **EA200 Legend**
- **EA200 'Am'** Amosite (brown asbestos)
- **EA200 'Ch'** Chrysotile (white asbestos)
- **EA200 'Cr'** Crocidolite (blue asbestos)
- **EA200 't'** Trace levels
- **EA200: 'UMF'** Unknown Mineral Fibres. "-" indicates fibres detected may or may not be asbestos fibres. Confirmation by alternative techniques is recommended.
- **EA200: Asbestos Identification Samples** were analysed by Polarised Light Microscopy including dispersion staining.
- **EA200: Negative results for vinyl tiles** should be confirmed by an independent analytical technique.



NATA Accredited Laboratory 825

Accredited for compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Asbestos Identifier	Newcastle - Asbestos
Pabi Subba	Senior Organic Chemist	Sydney Inorganics Sydney Organics Sydney Organics Sydney Inorganics
Raymond Commodor	Instrument Chemist	



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				QC4	----	----	----	----
				27-MAR-2013 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1307537-001	----	----	----	----
EA055: Moisture Content								
Moisture Content (dried @ 103°C)	----	1.0	%	17.1	----	----	----	----
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples								
Asbestos Detected	1332-21-4	0.1	g/kg	No	----	----	----	----
Asbestos Type	1332-21-4	0.1	--	-	----	----	----	----
Sample weight (dry)	----	0.01	g	61.4	----	----	----	----
APPROVED IDENTIFIER:	----	-	--	C.OWLER	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	11	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	21	----	----	----	----
Copper	7440-50-8	5	mg/kg	28	----	----	----	----
Lead	7439-92-1	5	mg/kg	22	----	----	----	----
Nickel	7440-02-0	2	mg/kg	8	----	----	----	----
Zinc	7440-66-6	5	mg/kg	18	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP035G: Total Phenol by Discrete Analyser								
Phenols (Total)	----	1	mg/kg	<1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				QC4	----	----	----	----
				27-MAR-2013 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1307537-001	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	----	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)

Client sample ID

Client sampling date / time

				QC4	----	----	----	----
				27-MAR-2013 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1307537-001	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued								
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene TEQ (WHO)	----	0.5	mg/kg	<0.5	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft								
C6 - C10 Fraction	----	10	mg/kg	<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	----	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----
EP080: BTEX								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----



Analytical Results

Sub-Matrix: **SOIL** (Matrix: **SOIL**)

Client sample ID

Client sampling date / time

				QC4	----	----	----	----
				27-MAR-2013 15:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1307537-001	----	----	----	----
EP080: BTEX - Continued								
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
EP080: BTEXN								
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----
^ Total Xylenes	1330-20-7	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	105	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.1	%	118	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.1	%	106	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.1	%	90.0	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.1	%	89.8	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.1	%	82.9	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.1	%	89.6	----	----	----	----
Anthracene-d10	1719-06-8	0.1	%	85.9	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.1	%	93.0	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	0.1	%	73.5	----	----	----	----
Toluene-D8	2037-26-5	0.1	%	90.8	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.1	%	89.7	----	----	----	----

Analytical Results

Descriptive Results

Sub-Matrix: **SOIL**

Method: Compound	Client sample ID - Client sampling date / time	Analytical Results
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples		
EA200: Description	QC4 - 27-MAR-2013 15:00	Mid yellow - brown clay soil with white rocks plus a trace of vegetation.



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	29.4	145
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	145
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	32	142
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	127
2-Chlorophenol-D4	93951-73-6	64	126
2,4,6-Tribromophenol	118-79-6	36	136
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	64	130
Anthracene-d10	1719-06-8	69	135
4-Terphenyl-d14	1718-51-0	64	136
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	72.8	133.2
Toluene-D8	2037-26-5	73.9	132.1
4-Bromofluorobenzene	460-00-4	71.6	130.0

Environmental Division

QUALITY CONTROL REPORT

Work Order	: ES1307537	Page	: 1 of 11
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR GRAEME MALPASS	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: graeme.malpass@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00037445 01 LAND CAPABILITY ASSESSMENT	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 02-APR-2013
C-O-C number	: ----	Issue Date	: 09-APR-2013
Sampler	: JM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1
Quote number	: EN/036/12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits



General Comments

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key :
Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
= Indicates failed QC



NATA Accredited
Laboratory 825

Accredited for
compliance with
ISO/IEC 17025.

Signatories

This document has been electronically signed by the authorized signatories indicated below. Electronic signing has been carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	Position	Accreditation Category
Ankit Joshi	Inorganic Chemist	Sydney Inorganics
Celine Conceicao	Senior Spectroscopist	Sydney Inorganics
Christopher Owler	Asbestos Identifier	Newcastle - Asbestos
Pabi Subba	Senior Organic Chemist	Sydney Inorganics
		Sydney Organics
		Sydney Organics
		Sydney Inorganics
Raymond Commodor	Instrument Chemist	



Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR:- No Limit; Result between 10 and 20 times LOR:- 0% - 50%; Result > 20 times LOR:- 0% - 20%.

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (QC Lot: 2807035)									
ES1307537-001	QC4	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	17.1	15.0	12.9	0% - 50%
ES1307572-001	Anonymous	EA055-103: Moisture Content (dried @ 103°C)	----	1.0	%	<1.0	<1.0	0.0	No Limit
EG005T: Total Metals by ICP-AES (QC Lot: 2806510)									
ES1307367-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	5	3	39.8	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	8	6	41.7	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	45	27	49.1	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	10	30.7	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	120	100	18.7	0% - 20%
ES1307537-001	QC4	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	21	21	0.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	8	8	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	11	11	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	28	27	0.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	22	22	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	18	18	0.0	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2806511)									
ES1307367-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.1	<0.1	0.0	No Limit
ES1307537-001	QC4	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP035G: Total Phenol by Discrete Analyser (QC Lot: 2808993)									
ES1307537-001	QC4	EP035G: Phenols (Total)	----	1	mg/kg	<1	<1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2806321)									
ME1300486-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2806320)									
ME1300486-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2806320) - continued									
ME1300486-001	Anonymous	EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2806320)									
ME1300486-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2806220)									
ES1307776-002	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2806220) - continued									
ES1307776-002	Anonymous	EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (WHO)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2805992)									
ES1307655-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	73	64	13.7	0% - 20%
ES1307772-021	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2806219)									
ES1307776-002	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	26800	28200	5.0	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	250	190	28.4	0% - 20%
		EP071: C10 - C14 Fraction	----	50	mg/kg	650	690	6.0	0% - 50%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2805992)									
ES1307655-001	Anonymous	EP080: C6 - C10 Fraction	----	10	mg/kg	212	185	13.7	0% - 20%
ES1307772-021	Anonymous	EP080: C6 - C10 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QC Lot: 2806219)									
ES1307776-002	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	23000	24600	6.8	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	4140	4270	3.2	0% - 20%
EP080: BTEXN (QC Lot: 2805992)									
ES1307655-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES1307772-021	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit



Method Blank (MB) and Laboratory Control Spike (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)		
Method: Compound	CAS Number	LOR	Unit	Result			LCS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2806510)									
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	21.7 mg/kg	109	84	128	
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	4.64 mg/kg	100	79	119	
EG005T: Chromium	7440-47-3	2	mg/kg	<2	43.9 mg/kg	105	70	130	
EG005T: Copper	7440-50-8	5	mg/kg	<5	32.0 mg/kg	108	83	127	
EG005T: Lead	7439-92-1	5	mg/kg	<5	40.0 mg/kg	100	81	117	
EG005T: Nickel	7440-02-0	2	mg/kg	<2	55.0 mg/kg	107	79	127	
EG005T: Zinc	7440-66-6	5	mg/kg	<5	60.8 mg/kg	105	78	130	
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2806511)									
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	2.57 mg/kg	79.2	72	114	
EP035G: Total Phenol by Discrete Analyser (QCLot: 2808993)									
EP035G: Phenols (Total)	----	1	mg/kg	<1	5 mg/kg	87.6	61	119	
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2806321)									
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	97.0	57.4	117	
EP068A: Organochlorine Pesticides (OC) (QCLot: 2806320)									
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	60.8	116	
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	92.6	59.4	115	
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	98.1	59.8	117	
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	59.8	118	
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	95.5	65.8	114	
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	65.6	115	
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.4	67	113	
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	96.5	65.6	113	
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	92.8	60.7	113	
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	98.5	65.8	116	
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	93.2	57.3	120	
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	95.8	67.4	116	
EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	67.5	114	
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	107	63	121	
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	109	66.1	117	
EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	104	65.3	116	
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	98.9	57.3	115	
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.5	63.6	119	
EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	111	58.4	127	
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	63.6	117	



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068A: Organochlorine Pesticides (OC) (QCLot: 2806320) - continued								
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	102	50.4	132
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2806320)								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	94.3	25.5	124
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	10.1	159
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	107	2.88	149
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	106	48.6	126
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	64.9	111
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	106	65.1	111
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	96.1	61.4	113
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	97.9	60.4	127
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	64.7	110
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	64.2	111
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	98.1	60	116
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	96.9	64.8	111
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	96.6	64.3	114
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	97.8	45.5	128
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	65.4	111
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	62	116
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	105	59.5	119
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	94.5	29.8	137
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2806220)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	4 mg/kg	90.1	81.9	113
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	4 mg/kg	85.1	79.6	113
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	4 mg/kg	84.4	81.5	112
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	4 mg/kg	83.2	79.9	112
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	4 mg/kg	85.3	79.4	114
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	4 mg/kg	84.1	81.1	112
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	4 mg/kg	86.4	78.8	113
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	4 mg/kg	87.5	78.9	113
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	4 mg/kg	87.6	77.2	112
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	4 mg/kg	86.0	79.8	114
EP075(SIM): Benzo(b)fluoranthene	205-99-2	0.5	mg/kg	<0.5	4 mg/kg	88.5	71.8	118
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	4 mg/kg	88.0	74.2	117
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	4 mg/kg	93.1	76.4	113
EP075(SIM): Indeno(1,2,3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	4 mg/kg	86.6	71	113
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	4 mg/kg	82.3	71.7	113
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	4 mg/kg	85.1	72.4	114
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2805992)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	79.1	68.4	128



Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2806219)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	200 mg/kg	95.6	59	131
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	300 mg/kg	99.2	74	138
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	200 mg/kg	93.1	63	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2805992)								
EP080: C6 - C10 Fraction	----	10	mg/kg	<10	31 mg/kg	80.4	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2806219)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	250 mg/kg	99.2	59	131
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	350 mg/kg	96.5	74	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	-----	-----	-----	-----
		50	mg/kg	----	150 mg/kg	83.0	63	131
EP080: BTEXN (QCLot: 2805992)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	77.2	62	120
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	76.7	62	128
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	78.7	58	118
EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	2 mg/kg	77.9	60	120
	106-42-3							
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	75.7	60	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	71.3	62	138

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2806510)							
ES1307367-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.2	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	99.4	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	100	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	94.8	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.5	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	97.1	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2806511)							
ES1307367-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	83.2	70	130
EP035G: Total Phenol by Discrete Analyser (QCLot: 2808993)							
ES1307537-001	QC4	EP035G: Phenols (Total)	----	4.2 mg/kg	85.0	70	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2806321)							
ME1300486-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	105	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2806320)							
ME1300486-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.2	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	76.8	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.6	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	94.0	70	130
		EP068: Endrin	72-20-8	2 mg/kg	92.6	70	130
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	82.1	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2806320)							
ME1300486-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	91.5	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	97.1	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.5	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.6	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	73.0	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2806220)							
ES1307776-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	84.5	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	102	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2805992)							
ES1307655-003	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.0	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2806219)							
ES1307776-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	101	73	137
		EP071: C15 - C28 Fraction	----	3140 mg/kg	# Not Determined	53	131
		EP071: C29 - C36 Fraction	----	2860 mg/kg	98.2	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2805992)							
ES1307655-003	Anonymous	EP080: C6 - C10 Fraction	----	37.5 mg/kg	98.4	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2806219)							
ES1307776-002	Anonymous	EP071: >C10 - C16 Fraction	----	850 mg/kg	# Not Determined	73	137
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	# Not Determined	53	131
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	75.8	52	132
EP080: BTEXN (QCLot: 2805992)							
ES1307655-003	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	74.5	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	76.0	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.9	70	130



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2805992) - continued							
ES1307655-003	Anonymous	EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	76.8	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.3	70	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	76.5	70	130

Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report

The quality control term Matrix Spike (MS) and Matrix Spike Duplicate (MSD) refers to intralaboratory split samples spiked with a representative set of target analytes. The purpose of these QC parameters are to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	MSD	Low	High	Value	Control Limit
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2805992)										
ES1307655-003	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	99.0	----	70	130	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2805992)										
ES1307655-003	Anonymous	EP080: C6 - C10 Fraction	----	37.5 mg/kg	98.4	----	70	130	----	----
EP080: BTEXN (QCLot: 2805992)										
ES1307655-003	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	74.5	----	70	130	----	----
		EP080: Toluene	108-88-3	2.5 mg/kg	76.0	----	70	130	----	----
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	76.9	----	70	130	----	----
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	76.8	----	70	130	----	----
			106-42-3							
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	77.3	----	70	130	----	----
		EP080: Naphthalene	91-20-3	2.5 mg/kg	76.5	----	70	130	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2806219)										
ES1307776-002	Anonymous	EP071: C10 - C14 Fraction	----	640 mg/kg	101	----	73	137	----	----
		EP071: C15 - C28 Fraction	----	3140 mg/kg	# Not Determined	----	53	131	----	----
		EP071: C29 - C36 Fraction	----	2860 mg/kg	98.2	----	52	132	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft (QCLot: 2806219)										
ES1307776-002	Anonymous	EP071: >C10 - C16 Fraction	----	850 mg/kg	# Not Determined	----	73	137	----	----
		EP071: >C16 - C34 Fraction	----	4800 mg/kg	# Not Determined	----	53	131	----	----
		EP071: >C34 - C40 Fraction	----	2400 mg/kg	75.8	----	52	132	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2806220)										
ES1307776-002	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	84.5	----	70	130	----	----
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	102	----	70	130	----	----



Sub-Matrix: SOIL				Matrix Spike (MS) and Matrix Spike Duplicate (MSD) Report						
				Spike Concentration	Spike Recovery (%)		Recovery Limits (%)		RPDs (%)	
					MS	MSD	Low	High	Value	Control Limit
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number							
EP068A: Organochlorine Pesticides (OC) (QCLot: 2806320)										
ME1300486-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	90.2	----	70	130	----	----
		EP068: Heptachlor	76-44-8	0.5 mg/kg	76.8	----	70	130	----	----
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.6	----	70	130	----	----
		EP068: Dieldrin	60-57-1	0.5 mg/kg	94.0	----	70	130	----	----
		EP068: Endrin	72-20-8	2 mg/kg	92.6	----	70	130	----	----
		EP068: 4,4`-DDT	50-29-3	2 mg/kg	82.1	----	70	130	----	----
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2806320)										
ME1300486-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	91.5	----	70	130	----	----
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	97.1	----	70	130	----	----
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	85.5	----	70	130	----	----
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	81.6	----	70	130	----	----
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	73.0	----	70	130	----	----
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2806321)										
ME1300486-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	105	----	70	130	----	----
EG005T: Total Metals by ICP-AES (QCLot: 2806510)										
ES1307367-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	102	----	70	130	----	----
		EG005T: Cadmium	7440-43-9	50 mg/kg	94.2	----	70	130	----	----
		EG005T: Chromium	7440-47-3	50 mg/kg	99.4	----	70	130	----	----
		EG005T: Copper	7440-50-8	250 mg/kg	100	----	70	130	----	----
		EG005T: Lead	7439-92-1	250 mg/kg	94.8	----	70	130	----	----
		EG005T: Nickel	7440-02-0	50 mg/kg	95.5	----	70	130	----	----
		EG005T: Zinc	7440-66-6	250 mg/kg	97.1	----	70	130	----	----
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2806511)										
ES1307367-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	83.2	----	70	130	----	----
EP035G: Total Phenol by Discrete Analyser (QCLot: 2808993)										
ES1307537-001	QC4	EP035G: Phenols (Total)	----	4.2 mg/kg	85.0	----	70	130	----	----

Environmental Division

INTERPRETIVE QUALITY CONTROL REPORT

Work Order	: ES1307537	Page	: 1 of 7
Client	: WSP ENVIRONMENTAL PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: MR GRAEME MALPASS	Contact	: Client Services
Address	: ENVIRONMENT & ENERGY LEVEL 1, 41 McLAREN STREET NORTH SYDNEY NSW, AUSTRALIA 2060	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
E-mail	: graeme.malpass@wspgroup.com	E-mail	: sydney@alsglobal.com
Telephone	: +61 02 8925 6700	Telephone	: +61-2-8784 8555
Facsimile	: +61 02 8925 6799	Facsimile	: +61-2-8784 8500
Project	: 00037445 01 LAND CAPABILITY ASSESSMENT	QC Level	: NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Site	: ----	Date Samples Received	: 02-APR-2013
C-O-C number	: ----	Issue Date	: 09-APR-2013
Sampler	: JM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1
Quote number	: EN/036/12		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. All pages of this report have been checked and approved for release.

This Interpretive Quality Control Report contains the following information:

- Analysis Holding Time Compliance
- Quality Control Parameter Frequency Compliance
- Brief Method Summaries
- Summary of Outliers



Analysis Holding Time Compliance

The following report summarises extraction / preparation and analysis times and compares with recommended holding times. Dates reported represent first date of extraction or analysis and precludes subsequent dilutions and reruns. Information is also provided re the sample container (preservative) from which the analysis aliquot was taken. Elapsed period to analysis represents number of days from sampling where no extraction / digestion is involved or period from extraction / digestion where this is present. For composite samples, sampling date is assumed to be that of the oldest sample contributing to the composite. Sample date for laboratory produced leachates is assumed as the completion date of the leaching process. Outliers for holding time are based on USEPA SW 846, APHA, AS and NEPM (1999). A listing of breaches is provided in the Summary of Outliers.

Holding times for leachate methods (excluding elutriates) vary according to the analytes being determined on the resulting solution. For non-volatile analytes, the holding time compliance assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These soil holding times are: Organics (14 days); Mercury (28 days) & other metals (180 days). A recorded breach therefore does not guarantee a breach for all non-volatile parameters.

Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content							
Soil Glass Jar - Unpreserved (EA055-103) QC4	27-MAR-2013	----	----	----	05-APR-2013	10-APR-2013	✓
EA200: AS 4964 - 2004 Identification of Asbestos in bulk samples							
Snap Lock Bag (EA200) QC4	27-MAR-2013	---	23-SEP-2013	----	08-APR-2013	05-OCT-2013	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC4	27-MAR-2013	05-APR-2013	23-SEP-2013	✓	08-APR-2013	23-SEP-2013	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC4	27-MAR-2013	05-APR-2013	24-APR-2013	✓	08-APR-2013	24-APR-2013	✓
EP035G: Total Phenol by Discrete Analyser							
Soil Glass Jar - Unpreserved (EP035G) QC4	27-MAR-2013	08-APR-2013	10-APR-2013	✓	08-APR-2013	10-APR-2013	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	15-MAY-2013	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	15-MAY-2013	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	15-MAY-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft							
Soil Glass Jar - Unpreserved (EP071) QC4	27-MAR-2013	04-APR-2013	10-APR-2013	✓	05-APR-2013	14-MAY-2013	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC4	27-MAR-2013	04-APR-2013	10-APR-2013	✓	05-APR-2013	14-MAY-2013	✓



Matrix: **SOIL**

Evaluation: * = Holding time breach ; ✓ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEX							
Soil Glass Jar - Unpreserved (EP080) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	10-APR-2013	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	10-APR-2013	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2010 Draft							
Soil Glass Jar - Unpreserved (EP080) QC4	27-MAR-2013	05-APR-2013	10-APR-2013	✓	08-APR-2013	10-APR-2013	✓



Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(where) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: ✖ = Quality Control frequency not within specification ; ✔ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Moisture Content	EA055-103	2	19	10.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.5	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	9	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.1	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Phenol By Discrete Analyser	EP035G	1	1	100.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	2	20	10.0	10.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Phenol By Discrete Analyser	EP035G	1	1	100.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.5	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Pesticides by GCMS	EP068	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.1	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Total Phenol By Discrete Analyser	EP035G	1	1	100.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	NEPM 1999 Schedule B(3) and ALS QCS3 requirement
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	8	12.5	5.0	✓	ALS QCS3 requirement
Pesticides by GCMS	EP068	1	9	11.1	5.0	✓	ALS QCS3 requirement
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.1	5.0	✓	ALS QCS3 requirement
Total Mercury by FIMS	EG035T	1	20	5.0	5.0	✓	ALS QCS3 requirement
Total Metals by ICP-AES	EG005T	1	20	5.0	5.0	✓	ALS QCS3 requirement
Total Phenol By Discrete Analyser	EP035G	1	1	100.0	5.0	✓	ALS QCS3 requirement
TPH - Semivolatile Fraction	EP071	1	10	10.0	5.0	✓	ALS QCS3 requirement
TPH Volatiles/BTEX	EP080	1	20	5.0	5.0	✓	ALS QCS3 requirement



Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055-103	SOIL	A gravimetric procedure based on weight loss over a 12 hour drying period at 103-105 degrees C. This method is compliant with NEPM (2010 Draft) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Asbestos Identification in bulk solids	EA200	SOIL	AS 4964 - 2004 Method for the qualitative identification of asbestos in bulk samples
Total Metals by ICP-AES	EG005T	SOIL	(APHA 21st ed., 3120; USEPA SW 846 - 6010) (ICPAES) Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (1999) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	AS 3550, APHA 21st ed., 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (1999) Schedule B(3)
Total Phenol By Discrete Analyser	EP035G	SOIL	APHA 21st ed., 5530 B&D Steam distillable Phenols are reacted with 4-aminoantipyrine. The resultant colour intensity is measured by Seal
Polychlorinated Biphenyls (PCB)	EP066	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (1999) Schedule B(3) (Method 504,505)
TPH - Semivolatile Fraction	EP071	SOIL	(USEPA SW 846 - 8015A) Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C36. This method is compliant with NEPM (1999) Schedule B(3) (Method 506.1)
PAH/Phenols (SIM)	EP075(SIM)	SOIL	(USEPA SW 846 - 8270B) Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 502 and 507)
TPH Volatiles/BTEX	EP080	SOIL	(USEPA SW 846 - 8260B) Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (1999) Schedule B(3) (Method 501)
Preparation Methods	Method	Matrix	Method Descriptions
Phenols After Microdistillation	EP035D	SOIL	APHA 21st ed., 5530 A, B&D pH adjusted Steam distillable Phenolic compounds. The resultant colour intensity is measured by Discrete Analyser.
Methanolic Extraction of Soils for Purge and Trap	* ORG16	SOIL	(USEPA SW 846 - 5030A) 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids (Option A - Concentrating)	ORG17A	SOIL	In-house, Mechanical agitation (tumbler). 20g of sample, Na ₂ SO ₄ and surrogate are extracted with 150mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.



Preparation Methods	Method	Matrix	Method Descriptions
Tumbler Extraction of Solids (Option B - Non-concentrating)	ORG17B	SOIL	In-house, Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 20mL 1:1 DCM/Acetone by end over end tumble. The solvent is transferred directly to a GC vial for analysis.



Summary of Outliers

Outliers : Quality Control Samples

The following report highlights outliers flagged in the Quality Control (QC) Report. Surrogate recovery limits are static and based on USEPA SW846 or ALS-QWI/EN/38 (in the absence of specific USEPA limits). This report displays QC Outliers (breaches) only.

Duplicates, Method Blanks, Laboratory Control Samples and Matrix Spikes

Matrix: **SOIL**

Compound Group Name	Laboratory Sample ID	Client Sample ID	Analyte	CAS Number	Data	Limits	Comment
Matrix Spike (MS) Recoveries							
EP080/071: Total Petroleum Hydrocarbons	ES1307776-002	Anonymous	C15 - C28 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1307776-002	Anonymous	>C10 - C16 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.
EP080/071: Total Recoverable Hydrocarbons - NEPM 2	ES1307776-002	Anonymous	>C16 - C34 Fraction	----	Not Determined	----	MS recovery not determined, background level greater than or equal to 4x spike level.

- For all matrices, no Method Blank value outliers occur.
- For all matrices, no Duplicate outliers occur.
- For all matrices, no Laboratory Control outliers occur.

Regular Sample Surrogates

- For all regular sample matrices, no surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

This report displays Holding Time breaches only. Only the respective Extraction / Preparation and/or Analysis component is/are displayed.

- No Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

The following report highlights breaches in the Frequency of Quality Control Samples.

- No Quality Control Sample Frequency Outliers exist.

Client: WSP Environmental Pty Ltd				Client Project Name and Number: 37445 - Goodman - center street				Envirolab Services							
Project Mgr: Graeme Malpass				PO No.: 37445				12 Ashley St, Chatswood, NSW, 2067							
Sampler: Adeline Menet				Envirolab Services Quote No. :				Phone: 02 9910 6200							
Address: Lev 1, 41 McLaren St				Date results required:				Fax: 02 9910 6201							
North Sydney				Or choose: standard				E-mail: ahie@envirolabservices.com.au							
Email: adeline.menet@wspgroup.com				Note: Inform lab in advance if urgent turnaround is required - surcharge applies				Contact: Aileen Hie							
Phone: 89256700				Fax: 89256799											
Sample information				Tests Required								Comments			
Envirolab Sample ID	Client Sample ID	Date sampled	Type of sample	Combo	P1										Provide as much information about the sample as you can
1)	MW6	3/04		✓											
2)	Dup			✓											
3)	Trip				✓										
4)	MW7			✓											
5)	MW8			✓											
6)	MW9			✓											
7)	Rinsate			✓											
												Envirolab Services			
												12 Ashley St			
												Chatswood NSW 2067			
												Ph: (02) 9910 6200			
												Job No: 88399			
												Date Received: 4/4/13			
												Time Received: 11:40			
												Received by: PT			
												Temp: Cool/Ambient			
												Cooling: Ice/coolant			
												Security: Insecure/Secure			
Relinquished by (company): WSP				Received by (company): GU								Samples Received: Cool or Ambient (circle one)			
Print Name: Adeline Menet				Print Name: Pratiksha								Temperature Recieved at: (if applicable)			
Date & Time: 4/04/13				Date & Time: 4/4/13 11:40								Transported by: Hand delivered / courier			
Signature: [Signature]				Signature: PT								Page No:			

SAMPLE RECEIPT ADVICE

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney NSW 2060

ph: 8925 6700

Fax: 8925 6799

Attention: Graeme Malpass, Adeline Menet

Sample log in details:

Your reference:

37445 - Goodman

Envirolab Reference:

88399

Date received:

04/04/13

Date results expected to be reported:

11/04/13

Samples received in appropriate condition for analysis:

YES

No. of samples provided

7 waters

Turnaround time requested:

Standard

Temperature on receipt

Cool

Cooling Method:

Ice

Sampling Date Provided:

YES

Comments:

Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples.

Contact details:

Please direct any queries to Aileen Hie or Jacinta Hurst

ph: 02 9910 6200 fax: 02 9910 6201

email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

CERTIFICATE OF ANALYSIS

88399

Client:

WSP Environmental Pty Ltd
Level 1, 41 McLaren St
North Sydney
NSW 2060

Attention: Graeme Malpass, Adeline Menet

Sample log in details:

Your Reference:	37445 - Goodman
No. of samples:	7 waters
Date samples received / completed instructions received	04/04/13 / 04/04/13

Analysis Details:

Please refer to the following pages for results, methodology summary and quality control data.
Samples were analysed as received from the client. Results relate specifically to the samples as received.
Results are reported on a dry weight basis for solids and on an as received basis for other matrices.
Please refer to the last page of this report for any comments relating to the results.

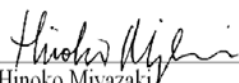
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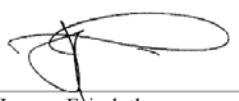
Date results requested by: / Issue Date:	11/04/13 / 11/04/13
Date of Preliminary Report:	Not issued

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Results Approved By:


Rhian Morgan
Reporting Supervisor


Hinoko Miyazaki
Chemist


Jeremy Faircloth
Chemist

vTRH(C6-C10)/BTEXN in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	04/04/2013	04/04/2013	04/04/2013	04/04/2013	04/04/2013
Date analysed	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
TRHC ₆ - C ₉	µg/L	<10	<10	<10	<10	<10
TRHC ₆ - C ₁₀	µg/L	<10	<10	<10	<10	<10
TRHC ₆ - C ₁₀ less BTEX (F1)	µg/L	<10	<10	<10	<10	<10
Benzene	µg/L	<1	<1	<1	<1	<1
Toluene	µg/L	<1	<1	<1	<1	<1
Ethylbenzene	µg/L	<1	<1	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2	<2	<2
o-xylene	µg/L	<1	<1	<1	<1	<1
Naphthalene	µg/L	<1	<1	<1	<1	<1
Surrogate Dibromofluoromethane	%	97	100	101	104	102
Surrogate toluene-d8	%	103	103	103	103	104
Surrogate 4-BFB	%	86	82	81	81	82

vTRH(C6-C10)/BTEXN in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	04/04/2013
Date analysed	-	05/04/2013
TRHC ₆ - C ₉	µg/L	<10
TRHC ₆ - C ₁₀	µg/L	<10
TRHC ₆ - C ₁₀ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	106
Surrogate toluene-d8	%	104
Surrogate 4-BFB	%	80

svTRH (C10-C40) in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
Date analysed	-	08/04/2013	08/04/2013	08/04/2013	08/04/2013	08/04/2013
TRHC ₁₀ - C ₁₄	µg/L	<50	<50	<50	<50	<50
TRHC ₁₅ - C ₂₈	µg/L	<100	<100	<100	<100	<100
TRHC ₂₉ - C ₃₆	µg/L	<100	<100	<100	<100	<100
TRH>C ₁₀ - C ₁₆	µg/L	<50	<50	<50	<50	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50	<50	<50	<50	<50
TRH>C ₁₆ - C ₃₄	µg/L	<100	<100	<100	<100	<100
TRH>C ₃₄ - C ₄₀	µg/L	<100	<100	<100	<100	<100
Surrogate o-Terphenyl	%	94	79	93	84	80

svTRH (C10-C40) in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	05/04/2013
Date analysed	-	08/04/2013
TRHC ₁₀ - C ₁₄	µg/L	<50
TRHC ₁₅ - C ₂₈	µg/L	<100
TRHC ₂₉ - C ₃₆	µg/L	<100
TRH>C ₁₀ - C ₁₆	µg/L	<50
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	<50
TRH>C ₁₆ - C ₃₄	µg/L	<100
TRH>C ₃₄ - C ₄₀	µg/L	<100
Surrogate o-Terphenyl	%	93

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
Date analysed	-	06/04/2013	06/04/2013	06/04/2013	06/04/2013	06/04/2013
Naphthalene	µg/L	<1	<1	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1	<1	<1
Fluorene	µg/L	<1	<1	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1	<1	<1
Anthracene	µg/L	<1	<1	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1	<1	<1
Pyrene	µg/L	<1	<1	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1	<1	<1
Chrysene	µg/L	<1	<1	<1	<1	<1
Benzo(b+k)fluoranthene	µg/L	<2	<2	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1	<1	<1
Benzo(a)pyrene TEQ	µg/L	<5	<5	<5	<5	<5
Surrogate p-Terphenyl-d14	%	123	96	106	106	100

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	05/04/2013
Date analysed	-	06/04/2013
Naphthalene	µg/L	<1
Acenaphthylene	µg/L	<1
Acenaphthene	µg/L	<1
Fluorene	µg/L	<1
Phenanthrene	µg/L	<1
Anthracene	µg/L	<1
Fluoranthene	µg/L	<1
Pyrene	µg/L	<1
Benzo(a)anthracene	µg/L	<1
Chrysene	µg/L	<1
Benzo(b+k)fluoranthene	µg/L	<2
Benzo(a)pyrene	µg/L	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1
Dibenzo(a,h)anthracene	µg/L	<1
Benzo(g,h,i)perylene	µg/L	<1
Benzo(a)pyrene TEQ	µg/L	<5
Surrogate p-Terphenyl-d14	%	108

OCP in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
Date analysed	-	06/04/2013	06/04/2013	06/04/2013	06/04/2013	06/04/2013
HCB	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	106	91	99	91	87

OCP in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	05/04/2013
Date analysed	-	06/04/2013
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	96

OP Pesticides in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
Date analysed	-	06/04/2013	06/04/2013	06/04/2013	06/04/2013	06/04/2013
Diazinon	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos-methyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2	<0.2	<0.2
Surrogate TCMX	%	106	91	99	91	87

OP Pesticides in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	05/04/2013
Date analysed	-	06/04/2013
Diazinon	µg/L	<0.2
Dimethoate	µg/L	<0.2
Chlorpyrifos-methyl	µg/L	<0.2
Ronnel	µg/L	<0.2
Chlorpyrifos	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Ethion	µg/L	<0.2
Surrogate TCMX	%	96

PCBs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date extracted	-	05/04/2013	05/04/2013	05/04/2013	05/04/2013	05/04/2013
Date analysed	-	06/04/2013	06/04/2013	06/04/2013	06/04/2013	06/04/2013
Arochlor 1016	µg/L	<2	<2	<2	<2	<2
Arochlor 1221	µg/L	<2	<2	<2	<2	<2
Arochlor 1232	µg/L	<2	<2	<2	<2	<2
Arochlor 1242	µg/L	<2	<2	<2	<2	<2
Arochlor 1248	µg/L	<2	<2	<2	<2	<2
Arochlor 1254	µg/L	<2	<2	<2	<2	<2
Arochlor 1260	µg/L	<2	<2	<2	<2	<2
Surrogate TCLMX	%	106	91	99	91	87

PCBs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date extracted	-	05/04/2013
Date analysed	-	06/04/2013
Arochlor 1016	µg/L	<2
Arochlor 1221	µg/L	<2
Arochlor 1232	µg/L	<2
Arochlor 1242	µg/L	<2
Arochlor 1248	µg/L	<2
Arochlor 1254	µg/L	<2
Arochlor 1260	µg/L	<2
Surrogate TCLMX	%	96

HM in water - dissolved Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-1 MW6 03/04/2013 Water	88399-2 DUP 03/04/2013 Water	88399-4 MW7 03/04/2013 Water	88399-5 MW8 03/04/2013 Water	88399-6 MW9 03/04/2013 Water
Date prepared	-	5/4/2013	5/4/2013	5/4/2013	5/4/2013	5/4/2013
Date analysed	-	8/4/2013	8/4/2013	8/4/2013	8/4/2013	8/4/2013
Arsenic-Dissolved	µg/L	<1	<1	3	<1	<1
Cadmium-Dissolved	µg/L	0.2	0.2	1.7	0.2	0.6
Chromium-Dissolved	µg/L	<1	<1	1	1	<1
Copper-Dissolved	µg/L	1	1	2	1	3
Lead-Dissolved	µg/L	<1	<1	4	<1	<1
Mercury-Dissolved	µg/L	<0.05	<0.05	<0.05	<0.05	<0.05
Nickel-Dissolved	µg/L	3	3	87	8	21
Zinc-Dissolved	µg/L	6	9	120	19	69

HM in water - dissolved Our Reference: Your Reference Date Sampled Type of sample	UNITS ----- -----	88399-7 RINSATE 03/04/2013 Water
Date prepared	-	5/4/2013
Date analysed	-	8/4/2013
Arsenic-Dissolved	µg/L	<1
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	<1

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 draft Guideline on Investigation Levels for Soil and Groundwater.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM draft B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.

QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
vTRH(C6-C10)/BTEXNin Water						Base II Duplicate II %RPD		
Date extracted	-			04/04/2013	[NT]	[NT]	LCS-W1	04/04/2013
Date analysed	-			05/04/2013	[NT]	[NT]	LCS-W1	05/04/2013
TRHC ₆ - C ₉	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	119%
TRHC ₆ - C ₁₀	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	119%
TRHC ₆ - C ₁₀ less BTEX(F1)	µg/L	10	Org-016	[NT]	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	115%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	118%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	118%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	122%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	124%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	129	[NT]	[NT]	LCS-W1	102%
Surrogate toluene-d8	%		Org-016	100	[NT]	[NT]	LCS-W1	97%
Surrogate 4-BFB	%		Org-016	93	[NT]	[NT]	LCS-W1	104%
QUALITYCONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
svTRH(C10-C40)in Water						Base II Duplicate II %RPD		
Date extracted	-			05/04/2013	[NT]	[NT]	LCS-W1	05/04/2013
Date analysed	-			08/04/2013	[NT]	[NT]	LCS-W1	08/04/2013
TRHC ₁₀ - C ₁₄	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	97%
TRHC ₁₅ - C ₂₈	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	101%
TRHC ₂₉ - C ₃₆	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	85%
TRH>C ₁₀ - C ₁₆	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	97%
TRH>C ₁₀ - C ₁₆ less Naphthalene (F2)	µg/L	50	Org-003	[NT]	[NT]	[NT]	[NR]	[NR]
TRH>C ₁₆ - C ₃₄	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	101%
TRH>C ₃₄ - C ₄₀	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	85%
Surrogate o-Terphenyl	%		Org-003	78	[NT]	[NT]	LCS-W1	89%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PAHs in Water						Base II Duplicate II %RPD		
Date extracted	-			05/04/2013	[NT]	[NT]	LCS-W4	05/04/2013
Date analysed	-			06/04/2013	[NT]	[NT]	LCS-W4	06/04/2013
Naphthalene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	86%
Acenaphthylene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	96%
Phenanthrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	91%
Anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	94%
Pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	97%
Benzo(a)anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	91%
Benzo(b+k)fluoranthene	µg/L	2	Org-012 subset	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W4	94%
Indeno(1,2,3-c,d)pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene TEQ	µg/L	5	Org-012 subset	[NT]	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012 subset	100	[NT]	[NT]	LCS-W4	111%

Client Reference: 37445 - Goodman

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
OCP in water						Base II Duplicate II %RPD		
Date extracted	-			05/04/2013	[NT]	[NT]	LCS-W1	05/04/2013
Date analysed	-			06/04/2013	[NT]	[NT]	LCS-W1	06/04/2013
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	101%
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	103%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	102%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	97%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	103%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	98%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	101%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	90%
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	103%
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	100%
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	100	[NT]	[NT]	LCS-W1	108%

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
OP Pesticides in water						Base II Duplicate II %RPD		
Date extracted	-			05/04/2013	[NT]	[NT]	LCS-W1	05/04/2013
Date analysed	-			06/04/2013	[NT]	[NT]	LCS-W1	06/04/2013
Diazinon	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Dimethoate	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos-methyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ronnel	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyrifos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	99%
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	104%
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	92%
Surrogate TCMX	%		Org-008	100	[NT]	[NT]	LCS-W1	105%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
PCBs in Water						Base II Duplicate II %RPD		
Date extracted	-			05/04/2013	[NT]	[NT]	LCS-W1	05/04/2013
Date analysed	-			06/04/2013	[NT]	[NT]	LCS-W1	06/04/2013
Arochlor 1016	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	µg/L	2	Org-006	<2	[NT]	[NT]	LCS-W1	102%
Arochlor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	100	[NT]	[NT]	LCS-W1	105%
QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
HM in water - dissolved						Base II Duplicate II %RPD		
Date prepared	-			08/04/2013	[NT]	[NT]	LCS-W1	08/04/2013
Date analysed	-			08/04/2013	[NT]	[NT]	LCS-W1	08/04/2013
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	85%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	[NT]	[NT]	LCS-W1	88%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	86%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	80%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	86%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	[NT]	[NT]	LCS-W1	100%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	86%

Client Reference: 37445 - Goodman

QUALITY CONTROL	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results	Spike Sm#	Spike % Recovery
HM in water - dissolved						Base II Duplicate II %RPD		
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	81%

Report Comments:

Asbestos ID was analysed by Approved Identifier: Not applicable for this job
 Asbestos ID was authorised by Approved Signatory: Not applicable for this job

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

Spikes for Physical and Aggregate Tests are not applicable.

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

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

Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.



Attachment 4: Waste Classification Summary

6099 - Carter Street Silverwater Result Tables
Table 1: Asbestos in Soil

			Asbestos
LocCode	Sample_Depth_Range	Sampled_Date	
BH16-2	0.4-0.6	29-Mar-07	ND
BH17-1	0.25-0.5	28-Jul-07	ND
BH18-7	1.2-1.3	29-Mar-07	ND
BH18-8	0.5-0.8	03-Apr-07	ND
BH19-1	0.5-0.7	29-Mar-07	ND
BH20-1	0.25-0.5	29-Mar-07	ND
BH21-5	0.6-0.8	30-Mar-07	ND
BH22-5	0.35-0.5	29-Mar-07	ND
BH23-4	0.5-0.8	28-Mar-07	ND
BH24-8	0.8-1.1	30-Mar-07	ND
BH24-9	0.1-0.3	18-Sep-07	ND
BH24-10	0-0.1	18-Sep-07	ND
BH24-11	0.4-0.6	18-Sep-07	Chrysotile
BH24-12	0.4-0.5	18-Sep-07	ND
HA2	0.16-0.3	03-Apr-07	ND
SP1-A	Surface stockpile	30-Mar-07	Chrysotile
SP1-C		30-Mar-07	ND
SP2-A		30-Mar-07	ND
SP2-B		30-Mar-07	ND
BH24-1	0.05-0.3	30-Mar-07	ND
BH24-2	0.1-0.3	30-Mar-07	ND
BH24-3	0.1-0.4	21-Apr-07	ND
BH24-4	0.0-0.3	30-Mar-07	ND
BH24-5	0.05-0.35	30-Mar-07	ND
BH24-6	0.0-0.15	30-Mar-07	ND
BH24-7	0.8-0.3	30-Mar-07	ND
BH24-8	0.1-0.4	30-Mar-07	ND
DUP14		03-Apr-07	ND

Table 2.1: Concentrations of Metals in Soil (Waste Guideline Summary with TCLP results)

					Antimony	Arsenic	Arsenic TCLP	Barium	Cadmium	Chromium	Chromium TCLP	Cobalt	Copper	Lead	Lead TCLP	Mercury	Molybdenum	Nickel	Nickel TCLP	Selenium	Tin	Zinc	
					mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	
					1	1	0.01	5	0.1	1	0.05	1	2	2	0.01	0.05	1	1	0.05	1	1	5	
Guidelines																							
CT1 - GSW					100	NA	NA	20	100	NA	NA	NA	NA	100	NA	4	100	40	NA	20	NA	NA	
CT2 - RSW					400	NA	NA	80	400	NA	NA	NA	400	NA	16	400	160	NA	80	NA	NA	NA	
SCC1 / TCLP1 - GSW					500	5	NA	100	1900	5	NA	NA	1500	5	50	1000	1050	2	50	NA	NA	NA	
SCC2 / TCLP2 - RSW					2000	20	NA	400	7600	20	NA	NA	6000	20	200	4000	4200	8	200	NA	NA	NA	
LocCode	Sample	Depth	Range	Sampled Date																			
BH16-1	0.3-0.5		COHESIVE FILL	28-Mar-07	-	5.0	-	-	<0.1	9.0	-	15.0	14.0	0.1	-	7.0	-	-	-	-	26.0	-	
BH16-1	0.8-1		CLAY	28-Mar-07	-	6.0	-	-	<0.1	10.0	-	11.0	10.0	<0.05	-	1.0	-	-	-	-	18.0	-	
BH16-2	0.1-0.3		COHESIVE FILL	29-Mar-07	-	4.0	-	-	<0.1	8.0	-	9.0	15.0	0.1	-	3.0	-	-	-	-	20.0	-	
BH16-2	0.4-0.6		COHESIVE FILL	29-Mar-07	<1	3.0	-	210.0	<0.1	6.0	<1	11.0	10.0	<0.05	<1	2.0	-	<2	<1	-	7.0	-	
BH16-3	0.2-0.2		GRANULAR FILL	29-Mar-07	-	2.0	-	-	<0.1	95.0	-	40.0	5.0	0.1	-	100.0	-	-	-	-	80.0	-	
BH16-4	0.2-0.35		COHESIVE FILL	29-Mar-07	-	5.0	-	-	<0.1	37.0	<0.05	40.0	12.0	<0.01	0.1	-	51.0	0.1	-	-	110.0	-	
BH16-4	0.5-0.9		REWORKED NATURAL	29-Mar-07	-	10.0	-	-	0.1	6.0	-	56.0	15.0	<0.01	0.1	-	41.0	0.1	-	-	270.0	-	
BH16-5	0.05-0.3		GRANULAR FILL	30-Mar-07	-	<1	-	-	0.1	70.0	<0.05	67.0	<2	<0.05	-	-	54.0	<0.05	-	-	36.0	-	
BH16-5	0.4-0.7		COHESIVE FILL	30-Mar-07	-	-	-	-	-	5.0	-	-	16.0	-	-	-	-	-	-	-	-	-	
BH17-1	0.25-0.5		GRANULAR FILL	28-Mar-07	<1	2.0	-	27.0	<0.1	5.0	<1	5.0	5.0	<0.05	<1	-	<2	<1	-	-	8.0	-	
BH17-1	0.0-25		TOPSOIL	28-Mar-07	-	1.0	-	-	<0.1	7.0	-	9.0	28.0	0.1	-	2.0	-	-	-	-	22.0	-	
BH17-2	0.05-0.3		GRANULAR FILL	30-Mar-07	-	2.0	-	-	0.1	29.0	-	80.0	3.0	0.1	-	110.0	-	-	-	-	70.0	-	
BH17-3	0.15-0.3		MIXED FILL	29-Mar-07	-	2.0	-	-	0.2	90.0	-	40.0	7.0	0.1	-	110.0	-	-	-	-	85.0	-	
BH17-3	0.5-0.7		REWORKED NATURAL	29-Mar-07	-	6.0	-	-	<0.1	3.0	-	10.0	5.0	<0.05	-	2.0	-	-	-	-	14.0	-	
BH17-3	0.8-1.1		CLAY	29-Mar-07	-	6.0	-	-	<0.1	8.0	-	22.0	23.0	0.0	<0.05	-	5.0	<0.05	-	-	28.0	-	
BH17-4	0.15-0.3		COHESIVE FILL	29-Mar-07	-	2.0	-	-	0.3	120.0	-	37.0	7.0	0.1	-	110.0	-	-	-	-	91.0	-	
BH17-4	0.9-1.1		CLAY	29-Mar-07	-	2.0	-	-	<0.1	5.0	-	42.0	7.0	0.1	-	4.0	-	-	-	-	45.0	-	
BH17-5	0.15-0.4		GRANULAR FILL	28-Mar-07	-	2.0	-	-	0.4	40.0	<0.05	34.0	6.0	<0.05	-	63.0	0.1	-	-	-	60.0	-	
BH17-6	0.15-0.3		COHESIVE FILL	30-Mar-07	-	<1	-	-	0.1	45.0	-	65.0	2.0	<0.05	-	54.0	-	-	-	-	43.0	-	
BH17-6	0.5-0.8		COHESIVE FILL	30-Mar-07	-	-	-	-	-	-	-	-	16.0	-	-	-	-	-	-	-	-	-	
BH17-6	0.9-1.1		COHESIVE FILL	30-Mar-07	-	-	-	-	-	-	-	-	17.0	-	-	-	-	-	-	-	-	-	
BH17-7	0.15-0.35		GRANULAR FILL	28-Mar-07	-	7.0	-	-	0.2	130.0	-	37.0	7.0	0.1	-	130.0	-	-	-	-	79.0	-	
BH17-7	0.35-0.7		CLAY	28-Mar-07	-	-	-	-	-	-	-	-	7.0	-	-	-	-	-	-	-	-	-	
BH17-7	0.8-1		SHALE	28-Mar-07	-	-	-	-	-	-	-	-	10.0	-	-	-	-	-	-	-	-	-	
BH18-1	0.0-2		TOPSOIL	28-Mar-07	-	1.0	-	-	<0.1	6.0	<0.05	6.0	25.0	<0.05	-	2.0	-	-	-	-	16.0	-	
BH18-2	0.15-0.35		COHESIVE FILL	28-Mar-07	-	2.0	-	-	0.2	40.0	<0.05	27.0	11.0	<0.01	<0.05	-	37.0	<0.05	-	-	61.0	-	
BH18-2	0.4-1		COHESIVE FILL	28-Mar-07	-	-	-	-	-	-	-	-	16.0	-	-	-	-	-	-	-	-	-	
BH18-2	2.3-2.8		COHESIVE FILL	28-Mar-07	-	-	-	-	-	-	-	-	8.0	-	-	-	-	-	-	-	-	-	
BH18-3	0.6-0.8		REWORKED NATURAL	29-Mar-07	-	9.0	-	-	<0.1	11.0	-	31.0	15.0	<0.05	-	4.0	-	-	-	-	26.0	-	
BH18-3	1.1-1.4		REWORKED NATURAL	29-Mar-07	-	2.0	-	-	<0.1	3.0	-	12.0	8.0	<0.05	-	1.0	-	-	-	-	8.0	-	
BH18-4	0.05-0.2		COHESIVE FILL	28-Mar-07	-	4.0	-	-	<0.1	6.0	-	18.0	12.0	<0.05	-	3.0	-	-	-	-	16.0	-	
BH18-5	0.05-0.2		COHESIVE FILL	28-Mar-07	-	3.0	-	-	0.1	18.0	<0.05	17.0	39.0	<0.01	0.1	15.0	<0.05	-	-	-	73.0	-	
BH18-6	0.1-0.2		GRANULAR FILL	28-Mar-07	-	6.0	-	-	<0.1	32.0	<0.05	28.0	15.0	<0.01	<0.05	-	31.0	0.1	-	-	61.0	-	
BH18-6	0.8-1		CLAY	28-Mar-07	-	7.0	-	-	<0.1	7.0	-	45.0	6.0	0.1	-	3.0	-	-	-	-	41.0	-	
BH18-7	0.12-0.4		COHESIVE FILL	29-Mar-07	-	5.0	-	-	<0.1	10.0	-	20.0	14.0	<0.05	-	2.0	-	-	-	-	12.0	-	
BH18-7	1.2-1.3		COHESIVE FILL	29-Mar-07	<1	3.0	-	58.0	<0.1	16.0	<0.05	5.0	27.0	22.0	<0.01	<0.05	<1	15.0	<0.05	<2	<1	24.0	-
BH18-7	1.35-1.5		CLAY	29-Mar-07	-	3.0	-	-	<0.1	3.0	-	2.0	5.0	<0.05	-	1.0	-	-	-	-	12.0	-	
BH18-8	0.1-0.3		GRANULAR FILL	03-Apr-07	-	1.0	-	-	0.1	120.0	-	31.0	5.0	0.1	-	120.0	-	-	-	-	76.0	-	
BH18-8	0.5-0.8		CLAY	03-Apr-07	-	8.0	-	-	<0.1	14.0	-	13.0	13.0	<0.05	-	<1	-	-	-	-	6.0	-	
BH18-9	0.1-0.4		GRANULAR FILL	29-Mar-07	-	7.0	-	-	0.2	14.0	<0.05	21.0	48.0	<0.01	0.1	12.0	<0.05	-	-	-	69.0	-	
BH18-9	0.5-0.7		CLAY	29-Mar-07	<1	6.0	-	60.0	<0.1	13.0	<0.05	<1	<1	<0.05	<1	-	<2	<1	-	-	5.0	-	
BH18-9	0.2-0.5		CLAY	21-Apr-07	-	-	-	-	-	-	-	-	11.0	-	-	-	-	-	-	-	-	-	
BH18-9	0.0-1		TOPSOIL	21-Apr-07	-	2.0	-	-	0.3	53.0	<0.05	38.0	51.0	0.0	0.1	-	5.0	<0.05	-	-	110.0	-	
BH18-9	0.2-0.4		COHESIVE FILL	28-Mar-07	-	3.0	-	-	0.1	8.0	-	86.0	3.0	<0.05	-	82.0	-	-	-	-	52.0	-	
BH18-9	0.8-1.2		CLAY	28-Mar-07	-	-	-	-	<0.1	5.0	-	17.0	7.0	<0.05	-	1.0	-	-	-	-	9.0	-	
BH18-9	0.15-0.35		GRANULAR FILL	29-Mar-07	-	<1	-	-	0.1	8.0	-	84.0	<2	<0.05	-	71.0	-	-	-	-	43.0	-	
BH18-9	0.4-0.7		REWORKED NATURAL	29-Mar-07	-	7.0	-	-	<0.1	10.0	-	13.0	0.1	0.1	-	9.0	-	-	-	-	44.0	-	
BH18-9	1.8-2.1		REWORKED NATURAL	29-Mar-07	-	6.0	-	-	<0.1	7.0	-	10.0	<1	<0.05	-	1.0	-	-	-	-	9.0	-	
BH18-9	0.15-0.25		COHESIVE FILL	28-Mar-07	-	7.0	-	-	0.4	7.0	-	87.0	<2	0.1	-	46.0	-	-	-	-	35.0	-	
BH18-9	0.4-1.2		CLAY	28-Mar-07	-	6.0	-	-	<0.1	4.0	-	23.0	18.0	<0.05	-	2.0	-	-	-	-	34.0	-	
BH18-9	0.3-0.5		COHESIVE FILL	18-Sep-07	-	5.0	-	-	<0.1	15.0	-	15.0	17.0	<0.05	-	3.0	-	-	-	-	22.0	-	
BH18-9	0.3-0.5		COHESIVE FILL	29-Mar-07	-	5.0	-	-	<0.1	18.0	-	9.0	11.0	<0.05	-	<1	-	-	-	-	5.0	-	
BH18-9	0.15-0.4		COHESIVE FILL	28-Mar-07	-	6.0	-	-	<0.1	15.0	-	16.0	6.0	<0.05	-	16.0	-	-	-	-	28.0	-	
BH18-9	0.3-0.5		CLAY	18-Sep-07	-	4.0	-	-	<0.1	7.0	-	10.0	8.0	<0.05	-	4.0	-	-	-	-	7.0	-	
BH18-9	0.8-1		CLAY	18-Sep-07	-	<1	-	-	<0.1	1.0	-	4.0	3.0	<0.05	-	1.0	-	-	-	-	3.0	-	
BH18-9	0.3-0.5		CLAY	18-Sep-07	-	13.0																	

6099 - Carter Street Silverwater Result Tables
Table 3: Concentrations of TPH in Soil

			TPH C 6 - C 9 Fraction mg/kg 10	TPH C10 - C14 Fraction mg/kg 50	TPH C15-C28 Fraction mg/kg 100	TPH C29-C36 Fraction mg/kg 100	TPH_C10 - C36 (Sum of total) mg/kg
EQL							
Guidelines							
	GSW	CT1	650				10000
	RSW	CT2	2600				40000
LocCode	Sample Depth Range	Sampled Date					
BH16-1	0.3-0.5	28-Mar-07	<10	<50	<100	<100	-
BH16-1	0.8-1	28-Mar-07	<10	<50	<100	<100	-
BH16-2	0.1-0.3	29-Mar-07	<10	<50	<100	<100	-
BH16-2	0.4-0.6	29-Mar-07	<10	<50	<100	<100	-
BH16-3	0.2-0.4	29-Mar-07	<10	<50	<100	<100	-
BH16-3	0-0.2	29-Mar-07	<10	<50	<100	260	FILL
BH16-4	0.2-0.35	29-Mar-07	<10	<50	<100	<100	-
BH16-4	0.35-0.55	29-Mar-07	<10	<50	<100	<100	-
BH16-4	0.6-0.9	29-Mar-07	<10	<50	<100	<100	-
BH16-5	0.05-0.3	30-Mar-07	<10	<50	250	240	490 FILL
BH16-5	0.4-0.7	30-Mar-07	<10	<50	<100	<100	-
BH16-6	0.2-0.4	18-Sep-07	<10	<50	<100	<100	-
BH16-6	1-1.2	18-Sep-07	<10	<50	<100	<100	-
BH16-7	0.1-0.3	18-Sep-07	<10	<50	<100	400	400 FILL
BH16-7	0.6-0.8	18-Sep-07	<10	<50	<100	<100	-
BH16-7	1-1.2	18-Sep-07	<10	<50	<100	<100	-
BH17-1	0.25-0.5	28-Mar-07	<10	<50	<100	<100	-
BH17-1	0-0.25	28-Mar-07	<10	<50	<100	<100	-
BH17-2	0.05-0.3	30-Mar-07	<10	<50	<100	<100	-
BH17-2	0.4-0.6	30-Mar-07	<10	<50	<100	<100	-
BH17-3	0.15-0.3	29-Mar-07	<10	<50	<100	<100	-
BH17-3	0.5-0.7	29-Mar-07	<10	<50	<100	<100	-
BH17-3	0.8-1.1	29-Mar-07	<10	<50	<100	<100	-
BH17-4	0.15-0.3	29-Mar-07	<10	<50	<100	<100	-
BH17-4	0.45-0.6	29-Mar-07	<10	<50	<100	<100	-
BH17-4	0.9-1.1	29-Mar-07	<10	<50	<100	<100	-
BH17-5	0.15-0.4	28-Mar-07	<10	<50	<100	<100	-
BH17-6	0.15-0.3	30-Mar-07	<10	<50	270	1640	1910 FILL
BH17-6	0.5-0.8	30-Mar-07	<10	<50	<100	<100	-
BH17-6	0.9-1.1	30-Mar-07	<10	<50	<100	<100	-
BH17-7	0.15-0.35	28-Mar-07	10	<50	<100	<100	-
BH17-7	0.35-0.7	28-Mar-07	<10	<50	<100	<100	-
BH17-7	0.8-1	28-Mar-07	<10	<50	<100	<100	-
BH17-8	0.2-0.4	18-Sep-07	<10	<50	<100	<100	-
BH17-8	2-2.2	18-Sep-07	<10	<50	<100	<100	-
BH17-8	2.9-3.1	18-Sep-07	<10	<50	<100	<100	-
BH17-9	0.1-0.3	18-Sep-07	<10	<50	<100	<100	-
BH17-9	0.5-0.6	18-Sep-07	<10	<50	<100	<100	-
BH17-9	0.6-0.8	18-Sep-07	<10	<50	<100	<100	-
BH17-10	0.5-0.7	18-Sep-07	<10	<50	<100	<100	-
BH18-1	0.2-0.4	28-Mar-07	<10	<50	<100	<100	-
BH18-1	0-0.2	28-Mar-07	<10	<50	<100	<100	-
BH18-2	0.15-0.35	28-Mar-07	<10	<50	<100	<100	-
BH18-2	0.4-1	28-Mar-07	10	<50	<100	<100	-
BH18-2	2.3-2.8	28-Mar-07	<10	<50	<100	<100	-
BH18-3	0.6-0.8	29-Mar-07	<10	<50	<100	<100	-
BH18-3	1.1-1.4	29-Mar-07	<10	<50	<100	<100	-
BH18-4	0.05-0.2	28-Mar-07	<10	<50	<100	<100	-
BH18-5	0.05-0.2	28-Mar-07	<10	<50	<100	<100	-
BH18-6	0.1-0.2	28-Mar-07	<10	<50	<100	<100	-
BH18-6	0.8-1	28-Mar-07	<10	<50	<100	<100	-
BH18-7	0.12-0.4	29-Mar-07	<10	<50	<100	<100	-
BH18-7	1.2-1.3	29-Mar-07	<10	<50	<100	<100	-
BH18-7	1.35-1.5	29-Mar-07	<10	<50	<100	<100	-
BH18-8	0.1-0.3	03-Apr-07	10	<50	<100	<100	-
BH18-8	0.5-0.8	03-Apr-07	<10	<50	<100	<100	-
BH18-8	2.0-2.2	03-Apr-07	<10	<50	<100	<100	-
BH18-8	2.6-2.8	03-Apr-07	<10	<50	<100	<100	-
BH19-1	0.1-0.4	29-Mar-07	<10	<50	<100	<100	-
BH19-1	0.5-0.7	29-Mar-07	<10	<50	<100	<100	-
BH19-2	0.2-0.5	21-Apr-07	<10	<50	<100	<100	-
BH19-2	0-0.1	21-Apr-07	<10	<50	<100	<100	-
BH19-3	0.2-0.4	28-Mar-07	<10	<50	<100	<100	-
BH19-3	0.8-1.2	28-Mar-07	<10	<50	<100	<100	-
BH19-5	0.15-0.35	29-Mar-07	<10	<50	<100	<100	-
BH19-5	0.4-0.7	29-Mar-07	<10	<50	<100	<100	-
BH19-6	0.15-0.25	28-Mar-07	<10	<50	<100	<100	-
BH19-6	0.4-1.2	28-Mar-07	<10	<50	<100	<100	-
BH19-7	0.3-0.5	18-Sep-07	<10	<50	<100	<100	-
BH19-8	0.3-0.5	29-Mar-07	<10	<50	<100	<100	-
BH19-9	0.15-0.4	28-Mar-07	<10	<50	<100	<100	-
BH19-9	0.3-0.5	18-Sep-07	<10	<50	<100	<100	-
BH19-9	0.8-1	18-Sep-07	<10	<50	<100	<100	-
BH19-10	0.3-0.5	18-Sep-07	<10	<50	<100	<100	-
BH20-1	0.05-0.25	29-Mar-07	<10	<50	<100	<100	-
BH20-1	0.25-0.5	29-Mar-07	<10	<50	<100	<100	-
BH20-2	0.2-0.3	21-Apr-07	<10	<50	<100	<100	-
BH20-2	0.3-0.6	21-Apr-07	<10	<50	<100	<100	-
BH20-3	0.16-0.25	21-Apr-07	<10	<50	<100	<100	-
BH20-3	0.4-0.7	21-Apr-07	<10	<50	<100	<100	-
BH20-4	0.15-0.2	21-Apr-07	<10	<50	<100	<100	-
BH20-4	0.2-0.5	21-Apr-07	<10	<50	<100	<100	-
BH20-5	0.16-0.26	21-Apr-07	<10	<50	<100	<100	-
BH20-5	0.3-0.6	21-Apr-07	<10	<50	<100	<100	-
BH20-5	0.7-0.9	21-Apr-07	<10	<50	<100	<100	-
BH20-6	0.2-0.5	29-Mar-07	<10	<50	<100	<100	-
BH20-7	0.25-0.5	29-Mar-07	<10	<50	<100	<100	-
BH20-7	0.6-0.8	29-Mar-07	<10	<50	<100	<100	-
BH20-8	0.05-0.15	03-Apr-07	<10	<50	<100	110	110 FILL

6099 - Carter Street Silverwater Result Tables
Table 3: Concentrations of TPH in Soil

				TPH C 6 - C 9 Fraction mg/kg 10	TPH C10 - C14 Fraction mg/kg 50	TPH C15-C28 Fraction mg/kg 100	TPH C29-C36 Fraction mg/kg 100	TPH_C10 - C36 (Sum of total) mg/kg
EQL								
Guidelines								
GSW CT1				650				10000
RSW CT2				2600				40000
LocCode	Sample Depth Range	Sampled Date						
BH20-8	0.15-0.25	03-Apr-07	<10	<50	<100	<100	-	
BH20-8	0.8-1.2	03-Apr-07	<10	<50	<100	<100	-	
BH21-1	0.33-0.5	29-Mar-07	<10	<50	<100	<100	-	
BH21-2	0.2-0.4	30-Mar-07	<10	<50	<100	<100	-	
BH21-3	0.2-0.5	21-Apr-07	<10	<50	<100	<100	-	
BH21-3	0.7-0.8	21-Apr-07	<10	<50	<100	<100	-	
BH21-4	0.2-0.4	21-Apr-07	<10	<50	<100	<100	-	
BH21-5	0.6-0.8	30-Mar-07	<10	<50	<100	<100	-	
BH21-5	0.8-1	30-Mar-07	<10	<50	<100	<100	-	
BH21-5	0-0.2	30-Mar-07	<10	<50	<100	<100	-	
BH22-1	0.25-0.4	29-Mar-07	<10	<50	<100	<100	-	
BH22-1	0.4-0.6	29-Mar-07	<10	<50	<100	<100	-	
BH22-2	0.3-0.5	29-Mar-07	<10	<50	<100	<100	-	
BH22-2	1-1.4	29-Mar-07	<10	<50	<100	<100	-	
BH22-3	0.2-0.5	29-Mar-07	<10	<50	<100	<100	-	
BH22-4	0.15-0.3	29-Mar-07	<10	<50	<100	<100	-	
BH22-4	0.7-0.9	29-Mar-07	<10	<50	<100	<100	-	
BH22-5	0.15-0.25	29-Mar-07	<10	<50	<100	<100	-	
BH22-5	0.35-0.5	29-Mar-07	<10	<50	<100	<100	-	
BH22-5	0.8-1.3	29-Mar-07	<10	<50	<100	<100	-	
BH23-1	0.18-0.23	28-Mar-07	<10	<50	<100	<100	-	
BH23-1	0.23-0.38	28-Mar-07	<10	<50	<100	<100	-	
BH23-2	0.23-0.4	28-Mar-07	<10	<50	<100	<100	-	
BH23-3	0.1-0.3	03-Apr-07	10	<50	<100	<100	-	
BH23-3	0.5-0.7	03-Apr-07	<10	<50	<100	<100	-	
BH23-4	0.22-0.35	28-Mar-07	<10	<50	<100	<100	-	
BH23-4	0.5-0.8	28-Mar-07	<10	<50	<100	<100	-	
BH23-5	0.1-0.3	03-Apr-07	10	<50	<100	<100	-	
BH23-6	0.1-0.3	03-Apr-07	<10	<50	<100	<100	-	
BH23-6	1.5-1.7	03-Apr-07	<10	<50	<100	<100	-	
BH24-1	0.05-0.3	30-Mar-07	<10	<50	<100	<100	-	
BH24-1	0.5-0.8	30-Mar-07	<10	<50	<100	<100	-	
BH24-2	0.1-0.3	30-Mar-07	<10	<50	<100	<100	-	
BH24-3	0.1-0.4	21-Apr-07	<10	<50	<100	<100	-	
BH24-3	0.4-0.55	21-Apr-07	<10	<50	<100	<100	-	
BH24-3	0.7-1	21-Apr-07	<10	<50	<100	<100	-	
BH24-4	0-0.3	30-Mar-07	<10	<50	<100	<100	-	
BH24-5	0.05-0.35	30-Mar-07	<10	<50	<100	<100	-	
BH24-5	0.4-0.6	30-Mar-07	<10	<50	<100	<100	-	
BH24-6	0-0.15	30-Mar-07	<10	<50	<100	<100	-	
BH24-7	0.05-0.3	30-Mar-07	<10	<50	<100	<100	-	
BH24-8	0.1-0.4	30-Mar-07	<10	1360	7710	<100	9070	FILL
BH24-8	0.8-1.1	30-Mar-07	<10	<50	<100	<100	-	
BH24-8	2.8-3.1	30-Mar-07	<10	<50	<100	<100	-	
HA1	0.1-0.2	03-Apr-07	<10	<50	<100	<100	-	
HA1	0.3-0.4	03-Apr-07	<10	<50	<100	<100	-	
HA2	0.16-0.3	03-Apr-07	<10	<50	<100	<100	-	
SP1-A		30-Mar-07	<10	<50	220	460	680	Special Waste (Asbestos) GSW
SP1-C		30-Mar-07	<10	<50	<100	<100	-	Special Waste (Asbestos) GSW
SP2-A		30-Mar-07	<10	<50	<100	180	180	
SP2-B		30-Mar-07	<10	<50	<100	150	150	
DUP1		28-Mar-07	<10	<50	<100	<100	-	
DUP2		28-Mar-07	<10	<50	<100	<100	-	
DUP3		28-Mar-07	<10	<50	<100	<100	-	
DUP4		29-Mar-07	<10	<50	<100	<100	-	
DUP5		29-Mar-07	<10	<50	<100	<100	-	
DUP6		29-Mar-07	<10	<50	<100	<100	-	
DUP7		29-Mar-07	<10	<50	<100	<100	-	
DUP8		29-Mar-07	<10	<50	<100	<100	-	
DUP9		29-Mar-07	<10	<50	<100	<100	-	
DUP10		29-Mar-07	<10	<50	<100	<100	-	
DUP11		30-Mar-07	<10	<50	<100	<100	-	
DUP 12		03-Apr-07	<10	<50	<100	<100	-	
DUP14		03-Apr-07	<10	<50	<100	<100	-	
DUP 15		03-Apr-07	<10	<50	<100	<100	-	
DUP A		21-Apr-07	<10	<50	<100	<100	-	

Table 4: Concentrations of PAHs in Soil

Table 4: Concentrations of PAHs in Soil				Table 4: Concentrations of PAHs in Soil																		
EQL				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(a) pyrene	Benzo(b)k(f)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)		
Guidelines				mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	0.001	mg/kg 1	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	mg/kg 0.5	200	
CT1 - GSW																					800	
CT2 - RSW																					NA	
SCC1 / TCLP1 - GSW																					NA	
SCC2 / TCLP2 - RSW																					NA	
LocCode	Sample Depth	Range	Sampled Date																		NA	
BH16-1	0.3-0.5		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-1	0.8-1		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-2	0.1-0.3		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-3	0-0.2		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-4	0.2-0.35		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-4	0.6-0.9		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH16-5	0.05-0.3		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-1	0-0.25		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-2	0.05-0.3		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-3	0.15-0.3		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-3	0.5-0.7		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-3	0.8-1.1		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-4	0.15-0.3		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-4	0.9-1.1		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-5	0.15-0.4		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-6	0.15-0.3		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.70	
BH17-7	0.15-0.35		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.70	
BH17-7	0.35-0.7		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH17-7	0.8-1		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-1	0-0.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-2	0.15-0.35		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-3	0.6-0.8		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-3	1.1-1.4		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-4	0.05-0.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-5	0.05-0.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-6	0.1-0.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-6	0.8-1		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-7	0.12-0.4		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-7	1.35-1.5		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH18-8	0.1-0.3		03-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-1	0.1-0.4		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-2	0.2-0.5		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-2	0-0.1		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-3	0.2-0.4		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-3	0.8-1.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-5	0.15-0.35		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-5	0.4-0.7		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-5	1.8-2.1		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-6	0.15-0.25		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-6	0.4-1.2		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-7	0.3-0.5		18-Sep-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-8	0.3-0.5		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-9	0.15-0.4		28-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-9	0.3-0.5		18-Sep-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-9	0.8-1		18-Sep-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH19-10	0.3-0.5		18-Sep-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-1	0.05-0.25		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-2	0.2-0.3		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-3	0.16-0.25		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-4	0.15-0.2		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-5	0.16-0.26		21-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-6	0.2-0.5		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-7	0.25-0.5		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-7	0.6-0.8		29-Mar-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-8	0.05-0.15		03-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
BH20-8	0.8-1.2		03-Apr-07	<0.5	<0.5	<0.5	<0.5	<0.5	-	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5</			

6099 - Carter Street Silverwater Result Tables
Table 4: Concentrations of PAHs in Soi

				Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benz(a) pyrene	Benz(a) pyrene TCLP	Benz(b)&(k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indene(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Sum of total)
EQI				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	0.001	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
Guidelines																				
CT1 - GSW				0.8																200
CT2 - RSW				3.2																800
SCC1 / TCLP1 - GSW				10																NA
SCC2 / TCLP2 - RSW				23																NA
LocCode	Sample	Depth	Range	Sampled	Date															
BH24-12	0.6-0.8			18-Sep-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
HA1	0.1-0.2			03-Apr-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
SP1-A				30-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.50
DUP2				28-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP3				28-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP4				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP5				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP6				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP7				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP8				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP9				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP10				29-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP11				30-Mar-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP 12				03-Apr-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-
DUP 15				03-Apr-07		<0.5	<0.5	<0.5	<0.5	<0.5	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-

Special Waste (Asbestos) GSW

6099 - Carter Street Silverwater Result Tables
Table 5: Concentrations of VOCs in Soil

[illegible][illegible]

6099 - Carter Street Silverwater Result Tables
Table 6: Concentrations of BTEX in Soil

			Benzene	Ethylbenzene	Toluene	m- & p-xylene	o-xylene	Xylene Total
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.2	0.5	0.5	1	0.5	
Guidelines								
CT1 - GSW			10	600	288			1000
CT2 - RSW			40	2400	1152			4000
SCC1 / TCLP1 - GSW								
SCC2 / TCLP2 - RSW								
LocCode	Sample_Depth_Range	Sampled_Date						
BH16-1	0.3-0.5	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-1	0.8-1	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-2	0.1-0.3	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-3	0-0.2	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-4	0.2-0.35	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-4	0.6-0.9	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-5	0.05-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-5	0.4-0.7	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH16-6	0.2-0.4	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH16-6	1-1.2	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH16-7	0.1-0.3	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH16-7	0.6-0.8	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH16-7	1-1.2	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-1	0-0.25	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-2	0.05-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-3	0.15-0.3	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-3	0.8-1.1	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-4	0.15-0.3	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-4	0.9-1.1	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-5	0.15-0.4	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-6	0.15-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-6	0.5-0.8	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-6	0.9-1.1	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-7	0.15-0.35	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-7	0.35-0.7	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-7	0.8-1	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH17-8	0.2-0.4	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-8	2.9-3.1	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-8	2-2.2	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-9	0.1-0.3	18-Sep-07	<0.2	<0.5	0.6	<1	<0.5	-
BH17-9	0.5-0.6	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-9	0.6-0.8	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH17-10	0.5-0.7	18-Sep-07	<0.2	<0.5	<0.5	<1	<0.5	-
BH18-1	0.2-0.4	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-1	0-0.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-2	0.15-0.35	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-2	0.4-1	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-2	2.3-2.8	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-3	0.6-0.8	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-3	1.1-1.4	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-4	0.05-0.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-5	0.05-0.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-6	0.1-0.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-6	0.8-1	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-7	0.12-0.4	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-7	1.35-1.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-8	0.1-0.3	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH18-8	0.5-0.8	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-1	0.1-0.4	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-2	0.2-0.5	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-2	0-0.1	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-3	0.2-0.4	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-3	0.8-1.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-5	0.15-0.35	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-6	0.15-0.25	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-6	0.4-1.2	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-8	0.3-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH19-9	0.15-0.4	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-1	0.05-0.25	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-2	0.2-0.3	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-2	0.3-0.6	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-3	0.16-0.25	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-3	0.4-0.7	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-4	0.15-0.2	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-4	0.2-0.5	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-5	0.16-0.26	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-5	0.3-0.6	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-5	0.7-0.9	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-6	0.2-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-7	0.25-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-7	0.6-0.8	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-8	0.05-0.15	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH20-8	0.8-1.2	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1

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Table 6: Concentrations of BTEX in Soil

			Benzene	Ethylbenzene	Toluene	m- & p-xylene	o-xylene	Xylene Total
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.2	0.5	0.5	1	0.5	
Guidelines								
CT1 - GSW			10	600	288			1000
CT2 - RSW			40	2400	1152			4000
SCC1 / TCLP1 - GSW								
SCC2 / TCLP2 - RSW								
LocCode	Sample_Depth_Range	Sampled_Date						
BH21-1	0.33-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-2	0.2-0.4	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-3	0.2-0.5	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-3	0.7-0.8	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-4	0.2-0.4	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-5	0.8-1	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH21-5	0-0.2	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-1	0.25-0.4	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-2	0.3-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-2	1-1.4	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-3	0.2-0.5	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-4	0.15-0.3	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-5	0.15-0.25	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH22-5	0.8-1.3	29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-1	0.18-0.23	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-2	0.23-0.4	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-3	0.1-0.3	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-3	0.5-0.7	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-4	0.22-0.35	28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-5	0.1-0.3	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-6	0.1-0.3	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH23-6	1.5-1.7	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-1	0.05-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-2	0.1-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-3	0.1-0.4	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-3	0.7-1	21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-4	0-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-5	0.05-0.35	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-6	0-0.15	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-7	0.05-0.3	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-8	0.1-0.4	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
BH24-8	2.8-3.1	30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
HA1	0.1-0.2	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
HA2	0.16-0.3	03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
SP1-A		30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
SP1-C		30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
SP2-A		30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
SP2-B		30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP1		28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP2		28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP3		28-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP4		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP5		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP6		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP7		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP8		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP9		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP10		29-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP11		30-Mar-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP 12		03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP14		03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP 15		03-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1
DUP A		21-Apr-07	<0.2	<0.5	<0.5	<1	<0.5	<1

Special Waste (Asbestos) GSW
Special Waste (Asbestos) GSW

[illegible][illegible]

[illegible]

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Table 8: Concentrations of Pesticides in Soil

			Aldrin + Dieldrin	DDT+DDE+DDD	4,4-DDE	a-BHC	Aldrin	b-BHC	cis-Chlordane	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	trans-chlordane
EQL			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
					0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.2	0.05
Guidelines Scheduled Chemicals - GSW			<50																				
LocCode	Sample_Depth_Range	Sampled_Date																					
BH18-8	0.5-0.8	03-Apr-07	<1	<2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
HA2	0.16-0.3	03-Apr-07	<1	<2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05
DUP14		03-Apr-07	<1	<2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05

6099 - Carter Street Silverwater Result Tables

Table 9: Concentrations of PCBs in Soil

			Arochlor 1016	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	PCBs (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	ug/kg	ug/kg	mg/kg
EQL			0.5	0.5	0.5	0.5	500	500	
Guidelines									20
CT1 - GSW									80
CT2 - RSW									
LocCode	Sample_Depth_Range	Sampled_Date							
BH16-2	0.4-0.6	29-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH17-1	0.25-0.5	28-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH18-7	1.2-1.3	29-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH18-8	0.5-0.8	03-Apr-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH19-1	0.5-0.7	29-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH20-1	0.25-0.5	29-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH21-5	0.6-0.8	30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH22-5	0.35-0.5	29-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH23-4	0.5-0.8	28-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH24-3	0.4-0.55	21-Apr-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
BH24-8	0.8-1.1	30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
HA2	0.16-0.3	03-Apr-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
SP1-A		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
SP1-C		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
SP2-A		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
SP2-B		30-Mar-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5
DUP14		03-Apr-07	<0.5	<0.5	<0.5	<0.5	<500	<500	<0.5

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Table 10: Concentrations of Inorganics in Soil

			Fluoride mg/kg	Sulphate mg/kg	Cyanide Total mg/kg	
EQL			1	10	1	
Guidelines						
CT1 - GSW			3000	NA	320	
CT2 - RSW			12000	NA	1280	
SCC1 / TCLP1 - GSW						
SCC2 / TCLP2 - RSW						
LocCode	Sample_Depth_Range	Sampled_Date				
BH16-2	0.4-0.6	29-Mar-07	<1	130.00	<1	
BH17-1	0.25-0.5	28-Mar-07	<1	90.00	1.00	FILL
BH18-7	1.2-1.3	29-Mar-07	<1	150.00	<1	
BH18-8	0.5-0.8	03-Apr-07	<1	150.00	<1	
BH19-1	0.5-0.7	29-Mar-07	<1	190.00	<1	
BH20-1	0.25-0.5	29-Mar-07	<1	50.00	2.00	FILL
BH21-5	0.6-0.8	30-Mar-07	3.00	90.00	<1	FILL
BH22-5	0.35-0.5	29-Mar-07	<1	100.00	<1	
BH23-4	0.5-0.8	28-Mar-07	<1	80.00	<1	
BH24-3	0.4-0.55	21-Apr-07	2.00	90.00	<1	FILL
BH24-8	0.8-1.1	30-Mar-07	1.00	50.00	<1	FILL
HA2	0.16-0.3	03-Apr-07	<1	30.00	<1	
DUP14		03-Apr-07	<1	130.00	<1	

Table 1, Appendix D: Heavy Metal Results for Soil Samples (results in mg/kg)

LocCode	Sample Depth	Soil Type	Sampled Date	As	Cd	Cr	Cu	Pb	Hg	Ni	Ni TCLP	Zn
	GSW		CT1	100	20	100	NA	100	4	40		NA
	RSW		CT2	400	80	400	NA	400	16	160		NA
Rig1	0.2	F	7/03/2005	5	0.1	15	38	11	<0.05	35		79
Rig1	4.3	N	7/03/2005	13	<0.1	15	20	19	<0.05	11		15
Rig2	0.2	F	7/03/2005	7	0.1	16	37	15	<0.05	41	No data	81
Rig2	4	N	7/03/2005	10	<0.1	23	8	10	<0.05	1		<5
Rig3	0.35	F	7/03/2005	10	0.2	11	35	24	<0.05	26		84
Rig3	4.8	N	7/03/2005	13	<0.1	14	29	31	<0.05	5		47
Rig4	0.2	N	7/03/2005	8	<0.1	16	13	26	<0.05	1		11
Rig4	5.3	N	7/03/2005	12	<0.1	22	11	17	<0.05	1		5
Rig5	0.2	F	7/03/2005	5	<0.1	3	15	7	<0.05	2		<5
Rig5	2	N	7/03/2005	11	<0.1	26	32	15	<0.05	1		14
Rig6	0.2	N	7/03/2005	6	<0.1	6	26	10	<0.05	22		24
Rig6	0.6	N	7/03/2005	11	<0.1	8	38	12	<0.05	6		32
Rig7	0.2	N	7/03/2005	8	<0.1	5	24	5	<0.05	9		6
Rig7	2.3	N	7/03/2005	12	<0.1	6	57	19	0.09	12		76
Rig8	0.2	N	7/03/2005	5	<0.1	4	18	8	<0.05	2		<5
Rig8	2.5	N	7/03/2005	7	<0.1	6	53	15	0.06	9		54
Rig9	0.2	N	7/03/2005	5	<0.1	5	33	10	<0.05	6		20
Rig9	2.5	N	7/03/2005	5	<0.1	6	56	14	<0.05	15		71
Rig10	0.2	N	7/03/2005	10	<0.1	15	14	14	<0.05	7		7
Rig10	0.9	N	7/03/2005	9	<0.1	10	27	13	<0.05	1		9
Rig11	0.2	N	7/03/2005	7	<0.1	11	2	11	<0.05	<1		<5
Rig11	1.8	N	7/03/2005	7	<0.1	3	7	7	<0.05	<1		<5
Rig12	0.2	N	7/03/2005	8	<0.1	5	10	9	<0.05	<1		10
Rig12	2.5	N	7/03/2005	11	<0.1	17	9	18	<0.05	<1		<5
Rig13	0.2	N	8/03/2005	9	<0.1	5	43	9	<0.05	9		51
Rig13	2.5	N	8/03/2005	7	0.2	9	33	17	<0.05	27		140
Rig14	0.2	F	8/03/2005	4	<0.1	13	16	8	<0.05	13		19
Rig14	5.7	N	8/03/2005	4	<0.1	3	16	6	<0.05	<1		6
Rig15	0.2	F	8/03/2005	5	<0.1	33	18	9	<0.05	29		31
Rig15	5	N	8/03/2005	6	<0.1	5	21	10	<0.05	<1		5
Rig16	0.2	F	8/03/2005	3	<0.1	5	18	9	<0.05	3		14
Rig16	5.7	N	8/03/2005	5	<0.1	4	18	10	<0.05	<1		6
Rig17	0.2	N	8/03/2005	6	0.1	17	25	43	<0.05	10		52
Rig17	7	N	8/03/2005	4	<0.1	7	20	12	<0.05	1		16
Rig18	0.2	N	8/03/2005	4	<0.1	2	18	5	<0.05	<1		6
Rig18	4	N	8/03/2005	3	<0.1	2	6	7	<0.05	<1		<5
Rig19	0.2	F	8/03/2005	5	<0.1	4	22	8	<0.05	7		28
Rig19	4.5	N	8/03/2005	4	<0.1	7	<2	6	0.09	<1		<5
Rig20	0.2	N	8/03/2005	6	<0.1	7	23	12	<0.05	9		34
Rig20	4.5	N	8/03/2005	6	<0.1	10	9	14	0.06	<1		<5
Rig21	0.2	N	8/03/2005	6	<0.1	8	15	10	<0.05	7		15
Rig21	3.7	N	8/03/2005	7	<0.1	11	7	11	<0.05	<1		<5
Rig22	0.2	F	8/03/2005	5	<0.1	5	15	9	<0.05	4		12
Rig22	4.5	N	8/03/2005	8	<0.1	18	15	21	<0.05	<1		11
Rig23	0.2		8/03/2005	6	<0.1	9	17	10	<0.05	8		45
Rig23	4.5		8/03/2005	11	<0.1	19	14	19	<0.05	2		13
RG24	0-0.5		19/03/2005	4	<0.1	9	29	8	<0.05	18		29
RG24	1-1.5		19/03/2005	6	<0.1	5	12	9	<0.05	2		10
RG24	5-5.6		19/03/2005	13	<0.1	19	18	11	<0.05	<1		5
RG25	0-0.5		19/03/2005	6	<0.1	5	20	8	<0.05	5		19
RG25	1-2.0		19/03/2005	5	<0.1	9	9	8	<0.05	1		7
RG25	3.5-4		19/03/2005	5	<0.1	10	10	12	<0.05	<1		<5
RG26	0.3-0.5		19/03/2005	4	<0.1	4	4	9	<0.05	<1		<5
RG26	1-1.5		19/03/2005	8	<0.1	8	6	17	<0.05	<1		<5
RG26	2.3		19/03/2005	5	<0.1	5	13	8	<0.05	<1		<5
RG27	0.3-0.5		19/03/2005	3	<0.1	3	16	7	<0.05	1		11
RG27	1-1.5		19/03/2005	9	<0.1	21	5	17	<0.05	1		<5
RG28	0-0.5		19/03/2005	15	<0.1	36	<2	20	<0.05	<1		<5
RG28	1-1.5		19/03/2005	6	<0.1	10	5	12	<0.05	<1		10
RG29	0.3-0.5		19/03/2005	10	<0.1	18	8	21	<0.05	1		5
RG29	1-1.5		19/03/2005	9	<0.1	22	2	16	<0.05	<1		5
RG30	0-0.5		19/03/2005	13	<0.1	16	13	13	<0.05	2		11
RG30	1-1.5		19/03/2005	13	<0.1	24	6	14	<0.05	2		<5
RG31	0-0.5		19/03/2005	12	<0.1	25	16	26	<0.05	4		30

Table 1, Appendix D: Heavy Metal Results for Soil Samples (results in mg/kg)

LocCode	Sample Depth	Soil Type	Sampled Date	As	Cd	Cr	Cu	Pb	Hg	Ni	Ni TCLP	Zn
	GSW		CT1	100	20	100	NA	100	4	40		NA
	RSW		CT2	400	80	400	NA	400	16	160		NA
RG31	1-1.5		19/03/2005	6	<0.1	17	4	10	<0.05	1		5
RG32	0.3-0.5		19/03/2005	4	<0.1	5	7	12	<0.05	1		<5
RG32	1-1.5		19/03/2005	7	<0.1	30	6	16	<0.05	1		<5
RG33	0.8		19/03/2005	10	<0.1	5	15	41	<0.05	1		<5
RG33	0.3-0.5		19/03/2005	7	<0.1	4	11	8	<0.05	<1		<5
RG34	0.3-0.5		19/03/2005	7	<0.1	6	13	12	<0.05	<1		<5
RG34	1-1.5		19/03/2005	3	<0.1	6	31	10	<0.05	<1		7
RG35	0.3-0.5		19/03/2005	11	<0.1	26	6	18	0.05	3		<5
RG35	1-1.5		19/03/2005	7	<0.1	13	8	13	<0.05	<1		<5
RG36	0.3-0.5		19/03/2005	7	<0.1	3	11	7	<0.05	<1		<5
RG36	1-1.5		19/03/2005	8	<0.1	20	4	15	<0.05	5		5
RG37	0.5		20/03/2005	8	<0.1	9	21	10	<0.05	1		5
RG37	1-1.5		20/03/2005	7	<0.1	5	18	11	<0.05	<1		<5
RG38	0.5		20/03/2005	9	<0.1	7	33	9	<0.05	1		6
RG38	1		20/03/2005	3	<0.1	4	32	8	<0.05	<1		7
RG39	0.5		20/03/2005	5	<0.1	6	10	11	<0.05	<1		<5
RG39	1-1.5		20/03/2005	3	<0.1	3	16	10	<0.05	<1		8
RG40	0.5		20/03/2005	9	<0.1	20	7	14	<0.05	3		5
RG40	1.5		20/03/2005	6	<0.1	5	9	10	<0.05	<1		<5
RG41	0.5		20/03/2005	9	<0.1	21	3	11	<0.05	2		<5
RG41	1		20/03/2005	5	<0.1	16	5	9	<0.05	2		<5
RG41	1.5		20/03/2005	4	<0.1	4	11	10	0.93	<1		<5
RG42	0.2		20/03/2005	10	<0.1	14	6	10	<0.05	<1		<5
RG42	1		20/03/2005	8	<0.1	8	12	11	<0.05	<1		<5
BH1	0.8	N	7/03/2005	8	<0.1	17	9	8	<0.05	2		<5
BH1	2.5	N CLAY	7/03/2005	5	0.2	6	31	19	<0.05	41	20	160
BH2	1	N	7/03/2005	9	<0.1	28	7	12	<0.05	1		<5
BH2	2.5	N	7/03/2005	7	<0.1	2	11	10	<0.05	6		18
BH3	1	N	7/03/2005	9	<0.1	19	17	17	<0.05	<1		5
BH3	2.5	N	7/03/2005	4	<0.1	3	13	8	<0.05	<1		8
BH4	1	N	7/03/2005	13	<0.1	20	13	13	<0.05	<1		9
BH4	2	N	7/03/2005	10	<0.1	6	15	12	<0.05	1		13
BH5	1		7/03/2005	5	<0.1	8	18	23	<0.05	11		48
BH5	2.5		7/03/2005	4	<0.1	6	32	13	<0.05	21		100
BH6	1		7/03/2005	6	<0.1	5	37	9	<0.05	11		90
BH6	2		7/03/2005	3	<0.1	3	18	11	<0.05	1		9
BH7	1		7/03/2005	4	<0.1	6	11	14	<0.05	<1		6
BH7	2		7/03/2005	2	<0.1	2	8	12	<0.05	<1		<5
BH8	1		7/03/2005	3	<0.1	2	11	3	<0.05	<1		<5
BH8	2		7/03/2005	4	<0.1	3	10	9	<0.05	<1		7
BH9	1		7/03/2005	5	<0.1	4	8	14	<0.05	1		17
BH9	2.5		7/03/2005	7	<0.1	4	12	7	<0.05	1		12
BH10	1		7/03/2005	2	<0.1	4	17	5	<0.05	<1		5
BH10	2.5		7/03/2005	2	<0.1	6	30	17	<0.05	5		26
BH11	1		7/03/2005	4	<0.1	4	21	5	<0.05	2		17
BH11	2		7/03/2005	5	<0.1	6	38	8	<0.05	2		10
BH12	1		7/03/2005	4	<0.1	6	58	11	<0.05	22		170
BH12	2		7/03/2005	7	<0.1	9	56	14	<0.05	25		130
BH13	1		7/03/2005	6	0.2	13	40	23	0.06	30		180
BH13	2	N SAND	7/03/2005	8	0.2	6	35	17	0.08	45	20	93
BH14	1		7/03/2005	6	0.2	9	33	21	0.05	24		130
BH14	1.8		7/03/2005	7	0.2	9	32	22	0.05	22		130
BH15	1.5		7/03/2005	10	<0.1	6	35	20	<0.05	1		15
BH16	1		7/03/2005	4	<0.1	4	34	11	<0.05	5		33
BH16	2		7/03/2005	5	<0.1	7	39	25	<0.05	26		120
BH17	0.25		8/03/2005	4	<0.1	6	16	11	<0.05	6		14
BH17	2		8/03/2005	7	<0.1	5	40	14	<0.05	11		66
BH18	1		7/03/2005	9	<0.1	3	13	8	<0.05	2		10
BH18	2		7/03/2005	2	<0.1	2	20	13	<0.05	4		20
BH19	1		7/03/2005	4	<0.1	5	8	17	<0.05	2		<5
BH19	2		7/03/2005	8	<0.1	17	10	14	<0.05	3		<5
BH21	1		7/03/2005	3	<0.1	4	15	7	<0.05	<1		8
BH21	2		7/03/2005	7	<0.1	11	13	17	<0.05	3		9
BH22	0.7		8/03/2005	4	<0.1	24	25	8	<0.05	26		27

Table 1, Appendix D: Heavy Metal Results for Soil Samples (results in mg/kg)

LocCode	Sample Depth	Soil Type	Sampled Date	As	Cd	Cr	Cu	Pb	Hg	Ni	Ni TCLP	Zn
	GSW		CT1	100	20	100	NA	100	4	40		NA
	RSW		CT2	400	80	400	NA	400	16	160		NA
BH22	1.5		8/03/2005	4	<0.1	4	43	8	<0.05	13		56
BH23	0.4		8/03/2005	3	<0.1	17	14	14	<0.05	17		29
BH23	1.5		8/03/2005	6	<0.1	5	19	10	<0.05	4		17
BH24	0.5		8/03/2005	4	<0.1	12	20	8	<0.05	20		26
BH24	1.5		8/03/2005	1	<0.1	1	15	6	<0.05	<1		8
BH25	0.35	ROADBAS	8/03/2005	2	0.1	66	35	5	<0.05	89	20	69
BH25	1		8/03/2005	3	<0.1	5	22	8	<0.05	4		16
BH26	0.7		8/03/2005	5	<0.1	11	61	10	<0.05	22		64
BH26	1.5		8/03/2005	5	<0.1	6	35	13	<0.05	12		70
BH27	1		8/03/2005	5	<0.1	10	23	12	<0.05	19		30
BH27	2		8/03/2005	8	<0.1	8	15	13	<0.05	2		12
BH28	0.2	F RUBBLE	4/04/2005	3	0.2	74	57	43	0.07	80	No data	260
BH28	0.7	F RUBBLE	4/04/2005	<1	<0.1	9	73	4	<0.05	69	No data	37
BH29	0.2		4/04/2005	8	0.2	12	81	23	0.07	33		190
BH29	0.8		4/04/2005	7	0.1	13	43	15	<0.05	26		67
DUP1 (RG6 - 0.6m)			7/03/2005	10	<0.1	8	38	12	<0.05	6		38
DUP2 (RG11 - 1.8m)			7/03/2005	6	<0.1	2	6	7	<0.05	<1		<5
TRIP1 (Rig11-1.8m)			7/03/2005	6	<0.1	3	6	7	<0.05	<1		<5
DUP3 (BH12 - 2.0m)			7/03/2005	7	<0.1	11	55	15	<0.05	25		140
DUP4 (BH19 - 2.0m)			7/03/2005	10	<0.1	22	9	16	<0.05	5		8
DUP5 (BH16 - 1.0m)			7/03/2005	4	<0.1	5	35	13	<0.05	5		41
DUP6 (RG16 - 0.2m)			8/03/2005	3	<0.1	4	14	9	<0.05	3		14
DUP7 (RG21 - 0.2m)			8/03/2005	9	<0.1	11	20	12	<0.05	11		18
DUP1 (BH27-2.0m)			8/03/2005	10	<0.1	11	19	15	<0.05	3		13
DUP2 (BH25-1.0m)			8/03/2005	5	<0.1	8	28	9	<0.05	8		20
TRIP2 (RG21 0.2m)			8/03/2005	9	<1	12	23	13	<0.1	9		20
TRIP3 (RG22 0.2m)			8/03/2005	5	<1	5	19	13	<0.1	3		22
DUP1 (RG25 0-0.5m)			19/03/2005	5	<0.1	4	19	7	<0.05	5		16
DUP2 (RG30 0-0.5m)			19/03/2005	11	<0.1	23	5	17	<0.05	2		7
TRIP 1 (RG30 0-0.5m)			19/03/2005	8	<1	24	11	16	<0.1	<2		15
DUP3 (RG26 0.3-0.5m)			19/03/2005	3	<0.1	2	5	7	<0.05	<1		<5
TRIP 2 (RG26 0.3-0.5m)			19/03/2005	<5	<1	4	7	11	<0.1	<2		<5
DUP1 (BH29 0.8m)			4/04/2005	3	<0.1	5	27	17	<0.05	4		58

LocCode	Sample Depth	Sampled Date	Benzene	Toluene	Ethylbenzene	Xylene	TPH C6-C9	TPH C14	C10- TPH C28	C15- TPH C36	C29-
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LocCode	Sample	Sampled Date	Benzene	Toluene	Ethylbenzene	Xylene	TPH	TPH	C10- TPH	C15- TPH	C29-				
	Depth											C6-C9	C14	C28	C36
	GSW	CT1	10	288	600	1000	650		10000						
	RSW	CT2	40	1152	2400	4000	2600		40000						
RG1	0.2	7/03/2005	<0.2	<0.5	<0.5	3	<10	<50	<100	<100	FILL				
RG2	0.2	7/03/2005	<0.2	<0.5	<0.5	3	<10	<50	<100	<100	FILL				
RG3	0.35	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG4	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG5	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG6	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG6	0.6	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG7	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG8	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG9	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG10	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG11	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG12	0.2	7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG13	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG14	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG15	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG16	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG17	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG18	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG19	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG20	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG21	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	140	460		FILL			
RG22	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG23	0.2	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG24	0-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG25	0-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG26	0.3-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG27	0.3-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG28	0-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG29	0.3-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG30	0-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG31	0-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100					
RG32	0.3-0.5	19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100						

Table 2, Appendix D: TPH and BTEX Soil Results (mg/kg)

LocCode	Sample Depth	Sampled Date	Benzene	Toluene	Ethylbenzene	Xylene	TPH C6-C9	TPH C14	C10- TPH C28	C15- TPH C36	C29-
	GSW	CT1	10	288	600	1000	650		10000		
	RSW	CT2	40	1152	2400	4000	2600		40000		
BH22	0.7	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH23	0.4	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH24	0.5	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH25	0.35	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH26	0.7	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH27	1	8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH28	0.2	4/04/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
BH29	0.2	4/04/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP1 (RG6 - 0.6m		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP2 (Rig11-1.8)		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
TRIP1 (Rig11-1.8r		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP3 (BH12 - 2.0r		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP4 (BH19 - 2.0r		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP5 (BH16 - 1.0r		7/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
TRIP2 (RG21 0.2m		8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	180	390	
TRIP3 (RG22 0.2m		8/03/2005	<0.2	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP1 (RG25 0-0.5		19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP2 (RG30 0-0.5		19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100	
DUP3 (RG26 0.3-0		19/03/2005	<0.5	<0.5	<0.5	<1.5	<10	<50	<100	<100	
TRIP 1 (RG30 0-0.		19/03/2005	<0.2	<0.2	<0.2	<0.4	<2	<50	<100	<100	
TRIP 2 (RG26 0.3-		19/03/2005	<0.2	<0.2	<0.2	<0.4	<2	<50	<100	<100	

FILL

Table 1 : Waste Classification Results (15 Carter Street Homebush) (total concentration results in mg/kg, TCLP results inug/l)

			total TCLP		total TCLP		total TCLP		total TCLP		total TCLP		total TCLP		total TCLP		total TCLP		TPH		TPH C10-	Waste
BH	Depth	Soil Type	As	As	Cd	Cd	Cr	Cr	Ni	Ni	Pb	Pb	Hg	Hg	B	T	E	X	C6-C9	C36	Classification	
Fill Material																						
RG1	0.2 fill		5	<10	0.1	<1	15	<50	35	20	11	<10	<0.05	<1	<0.2	<0.5	<0.5	3	<10	<100	Inert	
RG3	0.35 fill		10	<10	0.2	1	11	<50	26	20	24	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	Inert	
RG24	0-0.5 fill		4	20	<0.1	<1	9	<50	18	40	8	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	Inert	
RG28	0-0.5 fill		15	10	<0.1	<1	36	<50	<1	<20	20	10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	Inert	
RG35	0.3-0.5 fill		11	<10	<0.1	<1	26	<50	3	<20	18	<10	0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	Inert	
BH14	1 fill/sand		6	10	0.2	2	9	<50	24	170	21	20	0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	Inert	
Natural Material																						
RG1	4.3 clay		13	<10	<0.1	<1	15	<50	11	<20	19	10	<0.05	<1							VENM	
RG3	4.8 clay		13	<10	<0.1	<1	14	<50	5	<20	31	<10	<0.05	<1							VENM	
RG4	0.2 clay		8	<10	<0.1	<1	16	<50	1	<20	26	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
RG4	5.3 clay		8	<10	<0.1	<1	16	<50	1	<20	26	<10	<0.05	<1							VENM	
RG6	0.2 clay		6	<10	<0.1	<1	6	<50	22	50	10	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
RG7	2.3 clay		12	<10	<0.1	<1	6	<50	12	30	19	<10	0.09	<1							VENM	
RG12	2.5 clay		11	<10	<0.1	<1	17	<50	<1	<20	18	<10	<0.05	<1							VENM	
RG13	2.5 shale		7	<10	0.2	3	9	<50	27	80	17	10	<0.05	<1							VENM	
RG17	0.2 clay		6	<10	0.1	<1	17	<50	10	<20	43	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
RG22	4.5 clay		8	<10	<0.1	<1	18	<50	<1	<20	21	<10	<0.05	<1							VENM	
RG26	1-1.5 clay		8	<10	<0.1	<1	8	<50	<1	<20	17	<10	<0.05	<1							VENM	
RG29	1-1.5 clay		9	<10	<0.1	<1	22	<50	<1	<20	16	<10	<0.05	<1							VENM	
RG30	1-1.5 clay		13	<10	<0.1	<1	24	<50	2	<20	14	<10	<0.05	<1							VENM	
RG31	0-0.5 clay		12	<10	<0.1	<1	25	<50	4	<20	26	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
RG32	1-1.5 clay		7	<10	<0.1	<1	30	<50	1	<20	16	<10	<0.05	<1							VENM	
RG33	0.8 clay/shale		10	<10	<0.1	<1	5	<50	1	<20	41	<10	<0.05	<1							VENM	
RG36	1-1.5 clay		8	<10	<0.1	<1	20	<50	5	<20	15	<10	<0.05	<1							VENM	
BH1	2.5 clay		5	20	0.2	1	6	<50	41	20	19	<10	<0.05	<1							VENM	
BH3	1 shale		9	<10	<0.1	<1	19	<50	<1	<20	17	10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH5	1 clay		5	<10	<0.1	<1	8	<50	11	40	23	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH5	2.5 clay		4	20	<0.1	<1	6	<50	21	20	13	<10	<0.05	<1							VENM	
BH10	2.5 sand		2	10	<0.1	<1	6	<50	5	20	17	<10	<0.05	<1							VENM	
BH12	1 clay		4	<10	<0.1	<1	6	<50	22	<20	11	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH12	2 clay		7	10	<0.1	<1	9	<50	25	20	14	<10	<0.05	<1							VENM	
BH13	1 clay		6	<10	0.2	<1	13	<50	30	40	23	<10	0.06	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH13	2 sand		8	10	0.2	<1	6	<50	45	20	17	<10	0.08	<1							VENM	
BH14	1.8 sand		7	20	0.2	1	9	<50	22	140	22	20	0.05	<1							VENM	
BH15	1.5 clay		10	<10	<0.1	<1	6	<50	1	<20	20	10	<0.05	<1							VENM	
BH19	1 clay		4	<10	<0.1	<1	5	<50	2	<20	17	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH25	0.35 shale		2	<10	0.1	3	66	<50	89	60	5	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	
BH26	0.7 shale		5	<10	<0.1	<1	11	<50	22	40	10	<10	<0.05	<1	<0.2	<0.5	<0.5	<1.5	<10	<100	VENM	

TCLP data from laboratory report E021617

Total concentrations taken from laboratory reports included in RES (June 2005) Environmental Site Investigation Report



Attachment 5: Additional Geotechnical Investigation

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18th April 2013

WSP Environmental Pty Ltd
Level 1/41 McLaren Street
NORTH SYDNEY NSW 2059

Our Reference **AWG31208**

Your Reference

Site Address

Carter Street Precinct

HOME BUSH

Commission

Preliminary Geotechnical Investigation

1. Introduction

1.1. The site is known as Carter Street Precinct and has been divided into six(6) zones, except that there are three (3) Zone 2's and two(2) Zone 4's.

1.2. To avoid confusion, we have labelled the Zone's as follows;

- Southern Zone 2 as Zone 2A
- North-Western Zone 2 as Zone 2B
- North-Eastern Zone 2 as Zone 2C
- Southern Zone 4 as Zone 4A
- Northern Zone 4 as Zone 4B

1.3. Zone 1 is an elongated complex shape and for clarity we have also sub-divided this zone as follows;

- Sector south of Ulrig Road as Zone 1A
- Sector north of Ulrig Road as Zone 1B

1.4. As part of our commission, we were instructed to review and summarize existing reports, which cover the following zones;

- Douglas Partners Report No 44079, dated September 2006 – Zones 1A, 2A and 4A.
- Responsive Environmental Solutions Pty Ltd (RES) Project No 5008, dated March 2005 – Zones 1B, 3 and 5 (southern part only).

NOTE: We only have the RES borelogs (no report was supplied).

1.5. Previous testing included the following;

- Douglas Partners established fourteen (14) diamond core test sites numbered BH No 1, 2, 4-15. BH3 was not reported or plotted and BH12 refused in filled ground, and was redrilled nearby and re-named BH12A.
- Responsive Environmental Solutions (RES) Pty Ltd, established Seventy-One (71) auger test sites.



2. Testing Summary

- 2.1. AW Geotechnical Pty Ltd (in conjunction with WSP Environmental & Energy Pty Limited) established Twenty (20) test sites across what is know as Zones 1B, 2B, 2C, 4B, 5 and 6.

NOTE: It should be noted that test sites BH6, BH16 and BH 18 were not drilled due to timing constraints.

- 2.2. With reference to each zone, the following test sites are considered relevant;

NOTE: Where a test site plots close to a common zone boundary, the same test site will be mentioned in each zone.

Zone	DP	RES	AWG
1A	1,2,4,5,6,7,8,10,11	-	-
1B	-	BH9,11,14,17,19,RG6	7,8
2A	7,9,11,12,13,14,15	-	-
2B	-	-	2,3,17,19,20
2C	-	-	9,10
3	-	BH2,9,19 RG6,24,26,35	1,2,3,4,5,7
4A	14,15	-	-
4B	-	-	9,10,11,12,13,14
5	-	BH5, RG12, 24, 26	3, 4, 5, 19
6	-	-	5, 15, 19

- 2.3. The test sites/boreholes are not evenly spread across the site or any zone, the locations are more a function of access and the position of existing structures and both surface and subsurface infrastructure.

3. Summary of Zone 1A

3.1. Relevant Borehole No;

Douglas Partners TS No 1, 2, 4, 5, 6, 7, 8, 10 and 11

3.2. Depth of fill;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
1	400mm	7	500mm
2	400mm	8	1000mm
4	350mm	10	400mm
5	650mm	11	800mm
6	200mm		

3.3. Depth to Soil/Rock Interface;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
1	1250mm	7	500mm
2	1150mm	8	2250mm
4	1350mm	10	1200mm
5	1500mm	11	1900mm
6	700mm		

3.4. Rock Core Depth/BH Depth;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
1	9900mm	7	9700mm
2	10,500mm	8	9730mm
4	10,250mm	10	10,000mm
5	10,120mm	11	9800mm
6	9680mm		

3.5. Summary of Laboratory Results;

<u>TS/BH</u>	<u>Depth</u>	<u>Material</u>	<u>LL</u>	<u>PL</u>	<u>PI</u>	<u>LS</u>
8	1350-1800mm	Silty Clay	82	32	50	21.5%
11	1000-1200mm	Silty Clay	59	22	37	15.0%

3.6. Ground Water Levels;

<u>TS/BH</u>	<u>Depth</u>
1	6000mm
8	2700mm

4. Summary of Zone 1B

4.1. Relevant Borehole No;

RES BH No 9, 11, 14, 17, 19 and RG6

AWG TS No 7 and 8

4.2. Depth of fill;

RES	Depth	AWG	Depth
BH9	2500mm+	TS7	300mm
BH11	NE	TS8	300mm
BH14	NE		
BH17	400mm		
BH19	400mm		
RG6	NE		

4.3. Depth to Soil/Rock Interface;

RES	Depth	AWG	Depth
BH9	NE	TS7	NE
BH11	NE	TS8	NE
BH14	1800mm		
BH17	1600mm		
BH19	NE		
RG6	NE		

4.4. Rock Core Depth/BH Depth;

No rock coring completed.

4.5. Summary of Laboratory Results;

None carried out

4.6. Ground Water Levels;

Not Encountered

4.7. Additional Comments;

We are not convinced that Natural Sand was encountered in the RES BH14 rather we believe it to be filled ground as per RES BH9.

Similarly we are not confident that RES refused on rock in their BH14.

After the site is cleared for future development, we believe that this zone needs further onsite testing to clarify the soil conditions.

5. Summary of Zone 1A

5.1. Relevant Borehole No;

Douglas Partners TS No 7, 9, 11, 12, 13, 14 and 15

5.2. Depth of fill;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
7	500mm	13	200mm
9	700mm	14	400mm
11	800mm	15	350mm
12	650mm		

5.3. Depth to Soil/Rock Interface;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
7	500mm	13	900mm
9	900mm	14	1000mm
11	1900mm	15	1050mm
12	1150mm		

5.4. Rock Core Depth/BH Depth;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
7	9700mm	13	9800mm
9	9750mm	14	10,100mm
11	9800mm	15	10,100mm
12	9900mm		

5.5. Summary of Laboratory Results;

<u>TS/BH</u>	<u>Depth</u>	<u>Material</u>	<u>LL</u>	<u>PL</u>	<u>PI</u>	<u>LS</u>
13	250-550mm	Clay	52	20	32	14.5%

5.6. Ground Water Levels;

<u>TS/BH</u>	<u>Depth</u>
13	6000mm
15	2600mm

6. Summary of Zone 2B

6.1. Relevant Borehole No;

AWG 2, 3, 17, 19 and 20

6.2. Depth of fill;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
2	1300mm	19	700mm
3	2400mm+*	20	700mm
17	400mm		

*TS abandoned due to possible sub-surface infrastructure.

6.3. Depth to Soil/Rock Interface;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
2	4300mm	19	7600mm
3	NE	20	6000mm
17	5900mm		

6.4. Rock Core Depth/BH Depth;

No rock coring completed.

6.5. Summary of Laboratory Results;

<u>TS/BH</u>	<u>Depth</u>	<u>Material</u>	<u>Iss</u>	<u>Insitu Density</u>
2	1300-1400mm	Silty Clay	1.8%	2.15t/m ³
19	1000-1200mm	Silty Clay	3.1%	2.11t/m ³

6.6. Ground Water Levels;

Not Recorded

7. Summary of Zone 2C

7.1. Relevant Borehole No;

AWG 9 and 10

7.2. Depth of fill;

TS/BH	Depth
9	400mm
10	500mm

7.3. Depth to Soil/Rock Interface;

TS/BH	Depth
9	800mm
10	700mm

7.4. Rock Core Depth/BH Depth;

No rock coring completed.

7.5. Summary of Laboratory Results;

No samples tested

7.6. Ground Water Levels;

Not Recorded

8. Summary of Zone 3

8.1. Relevant Borehole No;

RES: BH2, 9, 19 and RG6, 12, 24, 26, 35

AWG: 1, 2, 3, 4, 5 and 7

8.2. Depth of fill;

RES	Depth	AWG	Depth
BH2	1000mm	TS1	700mm
BH9	2500mm+	TS2	1300mm
BH19	400mm	TS3	2400mm+*
RG6	NE	TS4	4000mm
RG12	NE	TS5	400mm
RG24	5500mm	TS7	300mm
RG26	NE		
RG35	1000mm		

*TS abandoned due to possible sub-surface infrastructure.

8.3. Depth to Soil/Rock Interface;

RES	Depth	AWG	Depth
BH2	1000mm	TS1	700mm
BH9	2500mm+	TS2	1300mm
BH19	400mm	TS3	2400mm+*
RG6	NE	TS4	4000mm
RG12	NE	TS5	400mm
RG24	5500mm	TS7	300mm
RG26	NE		
RG35	1000mm		

8.4. Rock Core Depth/BH Depth;

No rock coring completed.

8.5. Summary of Laboratory Results;

TS/BH	Depth	Material	Iss	Insitu Density
2	1300-1400mm	Silty Clay	1.8%	2.15t/m ³

8.6. Ground Water Levels;

TS/BH	Depth
RES-RG35	3000mm

9. Summary of Zone 4A

9.1. Relevant Borehole No;

Douglas Partners TS 14 and 15

9.2. Depth of fill;

TS/BH	Depth
14	400mm
15	350mm

9.3. Depth to Soil/Rock Interface;

TS/BH	Depth
14	1000mm
15	1050mm

9.4. Rock Core Depth/BH Depth;

TS/BH	Depth
14	10,100mm
15	10,150mm

9.5. Summary of Laboratory Results;

No samples tested

9.6. Ground Water Levels;

Not Recorded

10. Summary of Zone 4B

10.1. Relevant Borehole No;

AWG 9, 10, 11, 12, 13 and 14

10.2. Depth of fill;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
9	400mm	12	1900mm
10	500mm	13	1800mm
11	500mm	14	400mm

10.3. Depth to Soil/Rock Interface;

<u>TS/BH</u>	<u>Depth</u>	<u>TS/BH</u>	<u>Depth</u>
9	800mm	12	NE
10	700mm	13	7700mm
11	NE	14	2700mm

10.4. Rock Core Depth/BH Depth;

No rock coring completed.

10.5. Summary of Laboratory Results;

No Samples tested.

10.6. Ground Water Levels;

Not Recorded

11. Summary of Zone 5

11.1. Relevant Borehole No;

RES: BH5 & RG12, 24 and 26

AWG: 3, 4, 5, 6 and 19

11.2. Depth of fill;

RES	Depth	AWG	Depth
BH5	1000mm	TS3	2400mm+*
RG12	NE	TS4	400mm
RG24	5500mm	TS5	400mm
RG26	NE	TS6	N/A
		TS19	700mm

*TS abandoned due to possible sub-surface infrastructure.

11.3. Depth to Soil/Rock Interface;

RES	Depth	AWG	Depth
BH5	NE	TS3	NE
RG12	NE	TS4	6700mm
RG24	NE	TS5	6000mm
RG26	1500mm	TS6	N/A
		TS19	7600mm

11.4. Rock Core Depth/BH Depth;

No rock coring completed.

11.5. Summary of Laboratory Results;

TS/BH	Depth	Material	Iss	Insitu Density
19	1000-1200mm	Silty Clay	3.1%	2.11t/m ³

11.6. Ground Water Levels;

Not Recorded

12. Summary of Zone 6

12.1. Relevant Borehole No;

AWG 5, 15, 16 and 19

12.2. Depth of fill;

TS/BH	Depth	TS/BH	Depth
5	400mm	16	N/A
15	1000mm	19	700mm

12.3. Depth to Soil/Rock Interface;

TS/BH	Depth	TS/BH	Depth
5	600mm	16	N/A
15	5200mm	19	7600mm

12.4. Rock Core Depth/BH Depth;

No rock coring completed.

12.5. Summary of Laboratory Results;

TS/BH	Depth	Material	Iss	Insitu Density
19	1000-1200mm	Silty Clay	3.1%	2.11t/m ³

12.6. Ground Water Levels;

Not Recorded

13. Comments and Summary

13.1. This site has varying soil profiles from shallow stable rock, filled ground to over 5metres deep, through to deep clay with a moderate to high potential to change volume with changes in soil moisture.

13.2. On the relevant 1:100,000 geological map, the site plots within the Triassic Aged Ashfield Shale which consists of dark laminated shales.

13.3. Soil Reactivity

13.3.1. Prior to development, and in the absence of trees, the γ_s value according to AS2870-2011 would have been in the range of 20mm to 75mm across the site.

Because of this high variance, after the site has been cleared, further stage specific testing to determine which AS2870-2011 Classification applies to each zone is recommended.

13.4. Fill

13.4.1. Where the filled ground is shallower than 1000mm, we believe that it is well compacted, and proof rolling according to AS3798-2007 should be sufficient to certify this fill according to AS3798-2007 as Level 1 "controlled" fill.

13.4.2. Where the fill is deeper than 1000mm, further testing will be required (once the site has been cleared), to determine how to treat the fill.

13.4.3. The fill encountered in AWG TS No 1, 3, and 4 appears to indicate a back filled linear feature, however further testing once the site has been cleared will be needed to confirm the nature of this fill

13.4.4. The fill encountered in AWG TS No 12, 13 and 14 appears to indicate a back filled non-linear feature, however further testing once the site has been cleared will be needed to confirm the nature of this fill.

13.5. Structural Design

13.5.1. For structural footings the following guidelines are necessary;

- The footings must have sufficient stiffness to cope with all predictable ground movements at the time of construction (ys plus any movements, which “abnormal moisture conditions”) may generate.
- An allowable bearing pressure of 100kPa may be assumed at all levels into the certified fill and natural undisturbed strata.
- An allowable bearing pressure of 250kPa may be assumed 500mm and deeper into the natural stiff clay based strata.
- An allowable bearing pressure of 3000kPa may be assumed for piers socketed into the “medium” strength rock and 6000kPa is available in the “high” strength rock.

13.6. Basement Design;

As of the time of writing the proposal that was provided to us was to assume a 9metre site excavation across the site.

13.6.1. For any proposed basement excavations the following can be assumed;

- Temporary angles of 45-60° for the soil and between 70-90° for the rock (subject to further testing and to geotechnical approval after each lift of 1500mm).

13.6.2. The following parameters are for the design of retaining structures;

<u>Strata</u>	<u>Ø</u>	<u>Ko</u>	<u>Ka</u>	<u>Kp</u>
Soil	22°	0.63	0.45	2.20
Rock	35°	0.43	0.27	3.69

13.6.3. If rock anchors are required, than bond lengths can be determined later, as the underlying bedrock is strong in compression and very weak in tension.

13.6.4. For adhesion, we recommend adopting a value of zero in the soil and 300kPa for the "low to moderate" strength rock and 600kPa for the "high" strength rock.

13.7. Excavatability

- 13.7.1. The strata should be rippable by a dog tooth tyne down to the high strength rock, where a rock hammer will be required.

NOTE: Further testing including rock coring is required in order to ascertain the excavator size and rock hammer size etc.

- 13.7.2. WSP Environmental and Energy Figure 7 summarises the depth to this Medium/High Strength interface.

- 13.7.3. High strength rock lenses may also be encountered throughout the soil profile and without further testing it is difficult to delineate these lenses.

13.8. Pavement Design;

- 13.8.1. Further specific testing must be completed once a detailed design is complete, however based on the testing to date the following indicate CBR values are applicable;

Strata	CBR
Existing Fill	2-5%
Re-Compacted Fill	5-10%
Natural Clay	1-3%

13.9. Soil Contamination, Acid Sulfate Soils & Salinity

- 13.9.1. We understand that WSP Environmental & Energy are addressing such issues in a standalone report, which should be read in conjunction with this document.

13.10. Ground Water

- 13.10.1. No water table was encountered during our testing programme.
- 13.10.2. The absence of a water table does not exclude the possibility that during or after rains, water migrating vertically down through the soil will become trapped where a permeable layer overlies a less permeable layer and then become a “perched water table” and causes seepage into excavations as encountered.
- 13.10.3. Douglas Partners recorded groundwater seepage and recommended the use of pumping from sumps during excavation, which we believe will be applicable for the entire site.
- 13.10.4. To check for a true water table and its fluctuations, a long-term monitoring system needs to be completed in order to provide a more detailed analysis of possible water seepage and water table levels.
- 13.10.5. We do believe that limited monitoring was undertaken by WSP Environmental & Energy as part of their commission.

13.11. Settlement

- 13.11.1. Where features including (but not limited to) paths, landscaping, fencing, etc are supported on soil, but about the part of the structure supported at depth, an unquantifiable potential exists for these features to move as a response to settlement.
- 13.11.2. These junctions need to be carefully detailed and constructed, so as these movements will not result in unsightly damage.

AW Geotechnical

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14. Report Limitations

- 14.1. The contents of this report are based on the expertise and experience of the author, representing the company. Our commission didn't extend to assessing instability due to previous existing or proposed sub-surface mining, slope stability or earthquakes, nor did it extend to testing to comply with the relevant Contaminated Land Act.
- 14.2. The opinions and recommendations made in this report are based on the assumption that the test results are representative of the true site conditions. Even under optimum circumstances, actual conditions may differ from those reported to exist. Economic and time constraints necessarily limit the practical extent of any investigation. We therefore cannot accept responsibility for conditions encountered on this site, outside the areas tested, which are different to those reported. Where the attached soil profiles are similar to each other, then we would expect little variation across the site, so if widely different soils are encountered then a further inspection of the site and/or further testing may be required. If the attached soil profiles are different across the site, then variations will be encountered during footing excavations. In these cases, the design engineer/client must make a decision whether to extend the geotechnical budget to do more testing or to cope with the variations during footing excavations. Regardless of the option chosen the final inspection before placement of concrete is critical and the person certifying this inspection should be competent in identification of strata.
- 14.3. This report may only be reproduced in full, if any doubt exists to the number of pages in this report we should be contacted. The original copies of this report are signed in blue ink.

15. References

15.1. The following papers, reports or books have been consulted in preparing this report:

- o AS 2870-2011 "Residential Slabs & Footings" by Standards Australia
- o AS2870-1996 Supplement 1-1996 "Residential Slabs and Footings-Construction-Commentary, (Supplement to AS2870-1996).
- o AS 3798-2007 "Guidelines on Earthworks for Commercial and Residential Developments" by Standards Australia.
- o Paul Walsh & Don Cameron "The Design of Residential Slabs and Footings" by Standards Australia 1997
- o M.F. Atkinson "Structural Foundations Manual for Low-Rise Buildings" 1993
- o Monograph 9 "Field Geologists Manual 4th Edition – 2001" compiled by D.A. Berkman for AIMM.
- o B.G. Look and S.G. Griffiths "An Engineering Assessment of the Strength and Deformation Properties of Brisbane Rocks". AGS Journal Volume 36, no. 3 September 2001.

We believe these to be the most up to date publications available. Should other publications not listed are brought to our attention, we reserve the right to modify this report if they contain information conflicting with this report.

Log Sections

TEST SITE 1					TEST SITE 2						
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa		
100mm	FILL-gravelly clay (gy/brn) moist and uncontrolled			600	100mm	FILL-gravelly clay (gy/brn) moist and uncontrolled					
200mm					200mm						
300mm					300mm						
400mm					400mm						
500mm					500mm						
600mm					600mm						
700mm					700mm						
800mm	CLAY with gravel (rd/or/gy) dry and very stiff		7	600	800mm						
900mm			5		900mm						
1000mm			6		1000mm						
1100mm			6		1100mm						
1200mm			7		1200mm						
1300mm			7		1300mm						
1400mm			7		1400mm	CLAY (rd/or/gy) dry and very stiff		3			
1500mm			8		1500mm			4	350		
1600mm			8		1600mm			5			
1700mm			8		1700mm			6	400		
1800mm			7		1800mm			7			
1900mm			8		1900mm			7			
2000mm			9		2000mm			7	400		
2100mm			11		2100mm			8			
2200mm			12		2200mm			9			
2300mm			12		2300mm	dry & hard		10	+600		
2400mm			15		2400mm			10			
2500mm			+25		2500mm			8			
2600mm			utp		2600mm			+25			
2700mm	dry & hard				2700mm			utp			
2800mm					2800mm						
2900mm					2900mm						
3000mm					3000mm						
3100mm					3100mm						
3200mm					3200mm						
3300mm					3300mm				+600		
3400mm	XW ROCK (or/gy) dry and low strength				3400mm						
3500mm					3500mm						
3600mm					3600mm						
3700mm					3700mm						
3800mm					3800mm						
3900mm					3900mm						
4000mm					4000mm						
4100mm	END P/A				4100mm						
4200mm					4200mm						
4300mm					4300mm			+600			
4400mm					4400mm	XW ROCK (or/gy) dry and low strength					
4500mm					4500mm						
4600mm					4600mm						
4700mm					4700mm						
4800mm					4800mm						
4900mm					4900mm						
5000mm					5000mm						
END P/A					END P/A						

NOMENCLATURE: UTP=Unable to Penetrate DCP=9kg Dynamic Cone Penetrometer PP = Pocket Penetrometer A=Auger XW-ROCK=Extremely Weathered Rock Refer Tables 7.3.2 & 7.3.3 AS1726-1993 gy=grey or=orange yell=yellow rd=red wh=white brn=brown bk=black bl=blue gr=green Refer AS1726-1993 Clause A2.4 for classifying soils.

TEST SITE 3

TEST SITE 3				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL-gravelly clay (gy/brn) moist and uncontrolled			
200				
300				
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200	FILL-sandy gravelly clay (brn/gy) moist and uncontrolled			
2300				
2400				
2500	END P/A			
2600	- borehole terminated as			
2700	concerned about services			
2800				
2900				
3000				

TEST SITE 4

TEST SITE 4 Cont.

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	CONCRETE SLAB				4100	CLAY		3	450
200					4200	(rd/or/gy)		7	
300	FILL-gravelly silt (brn/or/gy)				4300	dry and very stiff		8	
400	dry and uncontrolled				4400			6	
500	FILL-gravelly clay				4500			6	
600	(gy/brn)				4600			7	
700	moist and uncontrolled				4700			7	
800					4800			7	
900					4900			7	
1000					5000			7	
1100					5100			8	450
1200					5200			9	
1300				450	5300			9	
1400					5400			10	
1500					5500			13	
1600					5600			15	
1700					5700			16	
1800					5800			17	
1900					5900			17	
2000					6000				
2100					6100				450
2200					6200				
2300				450	6300				
2400					6400				
2500					6500				
2600					6600				
2700					6700				
2800					6800	XW ROCK			
2900					6900	(or/gy)			
3000					7000	dry and low strength			
3100					7100				
3200					7200				
3300					7300				
3400					7400				
3500				450	7500				
3600					7600				
3700					7700				
3800					7800				
3900					7900				
4000					8000				
					END P/A				

TEST SITE 5

TEST SITE 5 Cont.

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	ASPHALT			+600	4100				
200	FILL-gravelly silt				4200				
300	(brn/or/gy)				4300				
400	dry and uncontrolled				4400				
500	CLAY (rd/or/gy)				4500				
600	dry and very stiff				4600				
700	XW ROCK (or/gy) dry and low strength				4700				
800					4800				
900					4900				
1000					5000				
1100					5100				
1200					5200				
1300					5300				
1400					5400				
1500					5500				
1600					5600				
1700					5700				
1800					5800				
1900					5900				
2000					6000				
2100					6100				
2200					6200				
2300					6300				
2400					6400				
2500					6500				
2600					6600				
2700					6700				
2800					6800				
2900					6900				
3000					7000				
3100					7100				
3200					7200				
3300	DW ROCK (gy—gy/or) dry & Low/Medium Strength				7300				
3400					7400				
3500					7500				
3600					7600				
3700					7700				
3800					7800				
3900					7900				
4000					8000				
					END P/A				

TEST SITE 6

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	No testing carried out at this location			
200				
300				
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				

TEST SITE 7					TEST SITE 8				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	ASPHALT			+600	100	ASPHALT			
200	FILL-gravelly silt (brn/or/gy)				200	FILL-gravelly silt (brn/or/gy)			
300	dry and uncontrolled				300	dry and uncontrolled			
400	CLAY (rd/or/gy)				400	XW ROCK			
500	dry and very stiff				500	(or/gy)			
600	XW ROCK				600	dry and low strength			
700	(or/gy)				700				
800	dry and low strength				800				
900					900				
1000					1000				
1100					1100				
1200					1200				
1300					1300				
1400					1400				
1500					1500				
1600					1600				
1700					1700				
1800					1800				
1900					1900				
2000					2000				
2100	END P/A				2100	END P/A			
2200					2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				

TEST SITE 9					TEST SITE 10				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	ASPHALT			+600	100	ASPHALT			+600
200	FILL-gravelly silt				200	FILL-gravelly silt			
300	(brn/or/gy)				300	(brn/or/gy)			
400	dry and uncontrolled				400	dry and uncontrolled			
500	CLAY			+600	500	CLAY (rd/or/gy)			+600
600	(rd/or/gy)				600	dry and very stiff			
700	dry and very stiff				700				
800					800	XW ROCK			
900	XW ROCK				900	(or/gy)			
1000	(or/gy)				1000	dry and low/Med strength			
1100	dry and low/Med strength				1100				
1200					1200				
1300					1300				
1400					1400				
1500					1500				
1600					1600				
1700					1700				
1800					1800				
1900					1900				
2000					2000				
2100					2100	END P/A			
2200					2200				
2300					2300				
2400					2400				
2500					2500				
2600					2600				
2700					2700				
2800					2800				
2900					2900				
3000					3000				
END P/A									

TEST SITE 11					TEST SITE 12				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100mm	ASPHALT				100mm	CONCRETE SLAB			
200mm	FILL-gravelly silt				200mm	FILL-gravelly clay			
300mm	(brn/or/gy)				300mm	(gy/brn)			
400mm	dry and uncontrolled			+600	400mm	moist and uncontrolled			
500mm					500mm				
600mm	CLAY				600mm				
700mm	(rd/or/gy)				700mm				
800mm	dry and very stiff				800mm				
900mm	XW ROCK				900mm				
1000mm	(or/gy)				1000mm				
1100mm	dry and low strength				1100mm				
1200mm					1200mm				
1300mm					1300mm				
1400mm					1400mm				
1500mm					1500mm				
1600mm					1600mm				
1700mm					1700mm				
1800mm					1800mm				
1900mm					1900mm				
2000mm					2000mm	CLAY		2	350
2100mm					2100mm	(rd/or/gy)		2	
2200mm					2200mm	dry and very stiff		3	
2300mm	CLAY with gravel			220	2300mm			4	500
2400mm	(or/gy/rd)				2400mm			4	
2500mm	moist and very stiff				2500mm			4	
2600mm	Mod-High Plasticity				2600mm			3	
2700mm					2700mm			3	
2800mm					2800mm			3	
2900mm					2900mm			2	
3000mm					3000mm			2	
3100mm				250	3100mm			2	
3200mm					3200mm			3	
3300mm					3300mm			2	
3400mm					3400mm			2	
3500mm	(dk brn/gy-or/gy)				3500mm			1	
3600mm	moist & firm			160	3600mm			2	
3700mm					3700mm			2	
3800mm					3800mm			2	
3900mm					3900mm			2	
4000mm					100	4000mm			
4100mm				4100mm		END P/A		2	
4200mm				4200mm				3	
4300mm	(or/gy-rd)			4300mm				3	
4400mm	moist & stiff/very stiff			4400mm		3			
4500mm				300	4500mm			4	
4600mm					4600mm			4	
4700mm					4700mm			5	
4800mm					4800mm			5	
4900mm					4900mm			6	
5000mm				300	5000mm			7	
5100mm					5100mm			9	
5200mm					5200mm			11	
5300mm					5300mm			10	
5400mm					5400mm			13	
5500mm					5500mm			15	
5600mm					5600mm			15	
5700mm					5700mm			16	
5800mm					5800mm			18	
5900mm					5900mm				
6000mm					6000mm				
END P/A									

TEST SITE 13

TEST SITE 13 Cont.

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	ASPHALT				4100	wet & stiff		5	300
200					4200			5	
300	FILL-gravelly clay (gy/brn) moist and uncontrolled				4300			6	
400					4400			7	
500					4500			8	
600					4600			9	
700					4700			9	
800					4800			8	
900					4900			8	
1000					5000			9	
1100					5100			8	300
1200					5200			10	
1300					5300			11	
1400					5400			12	
1500					5500			13	
1600					5600			13	
1700					5700			15	
1800					5800			14	
1900	CLAY with minor gravels (rd/or/gy) dry and very stiff		2		5900				
2000			2	250	6000				
2100			3		6100				300
2200			3	300	6200				
2300			3		6300				
2400			3		6400				
2500			3		6500				
2600			3		6600				
2700			3		6700				
2800			3		6800				
2900			3		6900				
3000			3		7000				
3100			3		7100				300
3200			3	300	7200				
3300			3		7300				
3400			3		7400				
3500	4		7500						
3600	4		7600		300				
3700	4		7700						
3800			4		7800	XW ROCK (or/gy) dry and low strength			
3900			5	300	7900				
4000			4		8000				
					END P/A				

TEST SITE 14					TEST SITE 15										
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa						
100mm	ASPHALT				100mm	CONCRETE									
200mm	FILL-gravelly silt				200mm	FILL-gravelly silt									
300mm	(brn/or/gy)				300mm	(brn/or/gy)									
400mm	dry and uncontrolled				400mm	dry and uncontrolled									
500mm	CLAY with minor gravels			300	500mm	FILL-gravelly clay			200						
600mm	(rd/or/gy)				600mm	(brn/gy)									
700mm	dry and very stiff				700mm	moist and uncontrolled									
800mm					800mm										
900mm					900mm										
1000mm					1000mm										
1100mm					1100mm	CLAYEY SILT				2					
1200mm					1200mm	(brn/gy)				1					
1300mm					1300mm	moist and dense				2					
1400mm					1400mm					3					
1500mm					1500mm	CLAY				2					
1600mm					1600mm	(rd/or/gy)				2					
1700mm					1700mm	dry and very stiff				2					
1800mm					1800mm					3					
1900mm					1900mm					3	300				
2000mm					2000mm					4					
2100mm					2100mm					3					
2200mm					2200mm					3	+600				
2300mm					2300mm					5					
2400mm					2400mm					6					
2500mm					2500mm					7					
2600mm					2600mm					8					
2700mm					2700mm					8					
2800mm	XW ROCK				2800mm					9					
2900mm	(or/gy)				2900mm					9					
3000mm	dry and low/med strength				3000mm					10					
3100mm					3100mm					13					
3200mm					3200mm	dry & hard				15	+600				
3300mm					3300mm					14					
3400mm					3400mm					14					
3500mm					3500mm					15					
3600mm					3600mm										
3700mm					3700mm										
3800mm					3800mm										
3900mm					3900mm										
4000mm					4000mm										
4100mm	END P/A				4100mm										
4200mm					4200mm						+600				
4300mm					4300mm										
4400mm					4400mm										
4500mm					4500mm										
4600mm					4600mm										
4700mm					4700mm										
4800mm					4800mm										
4900mm					4900mm										
5000mm					5000mm										
5100mm					5100mm						+600				
5200mm					5200mm										
5300mm					5300mm	XW ROCK									
5400mm					5400mm	(or/gy)									
5500mm					5500mm	dry and low/Med strength									
5600mm					5600mm										
5700mm					5700mm										
5800mm					5800mm										
5900mm					5900mm										
6000mm					6000mm										
					END P/A										

TEST SITE 16					TEST SITE 17				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100mm	No testing carried out at this location				100mm	CONCRETE SLAB			
200mm					200mm				
300mm					FILL-gravelly silt (brn/or/gy)				
400mm					400mm	dry and uncontrolled			
500mm					500mm	CLAY			
600mm					600mm	(rd/or/gy)			
700mm					700mm	dry and very stiff			
800mm					800mm				
900mm					900mm				
1000mm					1000mm				
1100mm					1100mm				
1200mm					1200mm				
1300mm					1300mm				
1400mm					1400mm				
1500mm					1500mm				
1600mm					1600mm				
1700mm					1700mm				
1800mm					1800mm				
1900mm					1900mm				
2000mm					2000mm				
2100mm					2100mm				
2200mm					2200mm				
2300mm					2300mm				
2400mm					2400mm				
2500mm					2500mm				
2600mm					2600mm				
2700mm					2700mm				
2800mm					2800mm				
2900mm					2900mm				
3000mm					3000mm				
3100mm					3100mm				
3200mm					3200mm				
3300mm	3300mm								
3400mm	3400mm								
3500mm	3500mm								
3600mm	3600mm								
3700mm	3700mm								
3800mm	3800mm								
3900mm	3900mm								
4000mm	4000mm								
4100mm	4100mm								
4200mm	4200mm								
4300mm	4300mm								
4400mm	4400mm								
4500mm	4500mm								
4800mm	4800mm								
4900mm	4900mm								
5000mm	5000mm								
5100mm	5100mm								
5200mm	5200mm								
5300mm	5300mm								
5400mm	5400mm								
5500mm	5500mm								
5600mm	5600mm								
5700mm	5700mm								
5800mm	5800mm								
5900mm	5900mm								
6000mm	6000mm								
6100mm	6100mm								
6200mm	6200mm								
6300mm	6300mm								
6400mm	6400mm								
6500mm	6500mm								
6600mm	6600mm								
					6000mm	XW ROCK (or/gy) dry and Medium Strength			
					6100mm				
					6200mm				
					6300mm				
					6400mm				
					6500mm				
					6600mm	END P/A			

TEST SITE 18

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	No testing carried out at this location			
200				
300				
400				
500				
600				
700				
800				
900				
1000				
1100				
1200				
1300				
1400				
1500				
1600				
1700				
1800				
1900				
2000				
2100				
2200				
2300				
2400				
2500				
2600				
2700				
2800				
2900				
3000				
3100				
3200				
3300				
3400				
3500				
3600				
3700				
3800				
3900				
4000				

TEST SITE 19

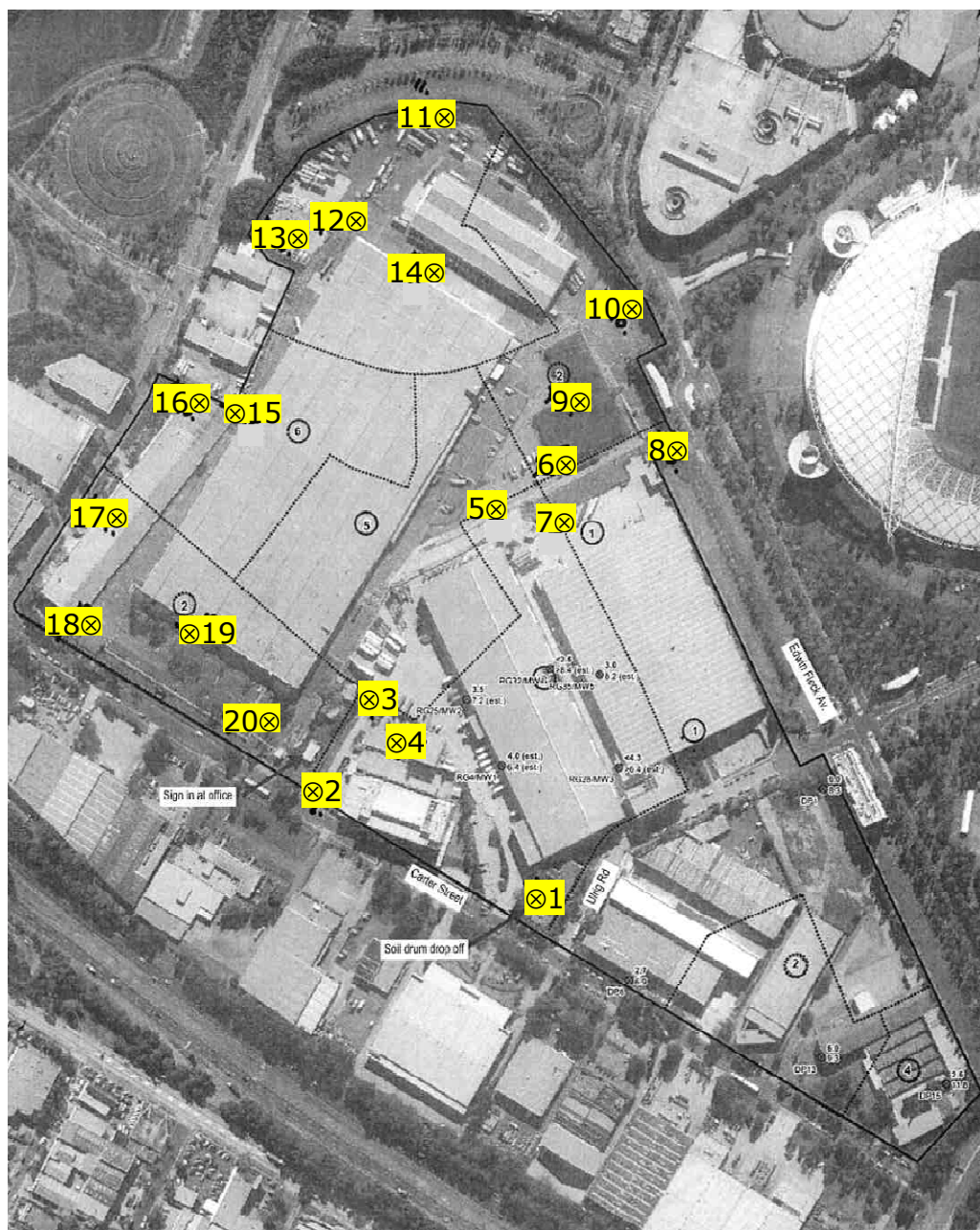
TEST SITE 19 Cont.

TEST SITE 13					TEST SITE 13 cont.				
Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa	Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100	FILL-gravelly clay (gy/brn) moist and uncontrolled				4100				450
200					4200				
300					4300				
400					4400				
500					4500				
600					4600				
700					4700				
800	CLAY with gravels (rd/or/gy) dry and very stiff		7	+600	4800				450
900			11	4900					
1000			10	5000					
1100			12	5100					
1200			13	5200					
1300			13	5300					
1400			15	5400	450				
1500			14	5500					
1600				5600					
1700				5700					
1800				5800					
1900				5900					
2000				6000					450
2100				6100					
2200				6200					
2300				6300					
2400				6400					
2500		6500	450						
2600	(rd/or-rd/gy) moist & very stiff			450	6600	wet & stiff			
2700					6700				
2800					6800				
2900					6900				
3000					7000				
3100					7100				
3200					7200				
3300					7300				
3400					7400				
3500					7500				
3600			450		7600				
3700	7700	XW ROCK (or/gy) dry and low strength							
3800	7800								
3900	7900								
4000	8000								
					END P/A				

TEST SITE 20

Depth (mm)	Description Soil Type-Colour-Consistency	FILL	DCP	PP kPa
100mm	ASPHALT			
200mm	FILL-gravelly silt (brn/or/gy)			
300mm	dry and uncontrolled			
400mm	FILL-gravelly clay			
500mm	(gy/brn)			
600mm	moist and uncontrolled		6 8 10 10 12 13 15 18 +25 utp	+600
700mm	CLAY (rd/or/gy) dry and very stiff/hard			
800mm				
900mm				
1000mm				
1100mm				
1200mm				
1300mm				
1400mm				
1500mm				
1600mm				
1700mm				
1800mm				
1900mm				
2000mm				
2100mm				
2200mm				
2300mm				
2400mm				
2500mm				
2600mm				
2700mm				
2800mm				
2900mm				
3000mm				
3100mm				
3200mm				
3300mm				
3400mm				
3500mm				
3600mm				
3700mm				
3800mm				
3900mm				
4000mm				
4100mm				
4200mm				
4300mm				
4400mm				
4500mm				
4600mm				
4700mm				
4800mm				
4900mm				
5000mm				
5100mm				
5200mm				
5300mm				
5400mm				
5500mm				
5600mm				
5700mm				
5800mm				
5900mm				
6000mm				
6100mm	XW ROCK (or/gy) dry and Medium strength			+600
6200mm				
6300mm				
6400mm				
6500mm				
6600mm				
6700mm				
6800mm				
6900mm				
7000mm				
END P/A				

Site Sketch



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SHRINK/SWELL TEST RESULTS

Client:	AW GEOTECHNICAL PTY LTD	Lab. No:	14205
Project:	AWG 31208	Job No:	AWG 31208
Location:	B.H. 2 @ 1.3m - 1.4m	Date Sampled:	27/03/2013
Test Procedure:	AS1289 7.1.1/2.1.1	Description:	mott.or-rd-br-gy SILTY CLAY with trace gravels

Swell Test

Moisture Content - Initial %	15.3	Applied Load kPa	25
Moisture Content - Final %	16.8	Water Used:	Distilled

Shrink Test

Moisture Content %	15.1	Wet Density t/m3	2.15
Extent of Cracking of Specimen	Minor	Inert Inclusions %	-10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	2.6	Swell %	1.3	Shrink/Swell Index %	1.8
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Prepared by:



Date: 08/04/2013

Our Reference: 14205

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SHRINK/SWELL TEST RESULTS

Client:	AW GEOTECHNICAL PTY LTD	Lab. No:	14206
Project:	AWG 31208	Job No:	AWG 31208
Location:	B.H. 19 @ 1.0m - 1.2m	Date Sampled:	27/03/2013
Test Procedure:	AS1289 7.1.1/2.1.1	Description:	mott.or-rd-br-gy SILTY CLAY with trace gravels

Swell Test

Moisture Content - Initial %	24.2	Applied Load kPa	25
Moisture Content - Final %	29.7	Water Used:	Distilled

Shrink Test

Moisture Content %	23.3	Wet Density t/m ³	2.11
Extent of Cracking of Specimen	Minor	Inert Inclusions %	-10
Extent of Crumbling of Specimen	Nil		

Shrinkage %	2.8	Swell %	5.7	Shrink/Swell Index %	3.1
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Prepared by:



Date: 08/04/2013

Our Reference: 14206

APOD Soil Testing Pty Ltd



Attachment 6: Borehole Summary Data (GIS)

Location ID	X MGA56 (m)	Y MGA56 (m)	Ground level		Borelog Source	End of Hole		Base of Fill		Top of Moderate Strength Rock	
			(mAHD)	Source		(mbgl)	(mAHD)	(mbgl)	(mAHD)	(mbgl)	(mAHD)
BH1	320455	6252707	7.3	ALScontours	RES2005	2.5	4.8	1.5	5.8	??	??
BH2	320437	6252696	7.7	ALScontours	RES2005	2.5	5.2	1.2	6.5	??	??
BH3	320509	6252736	9.2	ALScontours	RES2005	2.5	6.7	0.7	8.5	??	??
BH4	320495	6252729	8.2	ALScontours	RES2005	2	6.2	>2.0	<6.2	??	??
BH5	320312	6252885	6.5	ALScontours	RES2005	2.5	4	2.0	4.5	??	??
BH6	320449	6252766	10.3	ALScontours	RES2005	2	8.3	1.8	8.5	??	??
BH7	320446	6252816	10.6	ALScontours	RES2005	2	8.6	1.0	9.6	??	??
BH8	320456	6252795	10.6	ALScontours	RES2005	2	8.6	>2.0	<8.6	??	??
BH9	320470	6253004	10.2	ALScontours	RES2005	2.5	7.7	>2.5	<7.7	??	??
BH10	320498	6253020	10.3	ALScontours	RES2005	2.5	7.8	>2.5	<7.8	??	??
BH11	320531	6253035	10.3	ALScontours	RES2005	2	8.3	>2.0	<8.3	??	??
BH12	320542	6252991	11	ALScontours	RES2005	2	9	0.8	10.2	??	??
BH13	320560	6252953	11.4	ALScontours	RES2005	2	9.4	0.1	11.3	??	??
BH14	320597	6252938	11.7	ALScontours	RES2005	1.8	9.9	0.1	11.6	??	??
BH15	320603	6252873	11.6	ALScontours	RES2005	0	11.6	>0.0	<11.6	??	??
BH16	320617	6252884	11.9	ALScontours	RES2005	2	9.9	0.3	11.6	??	??
BH17	320618	6252845	11.7	ALScontours	RES2005	1.6	10.1	0.5	11.2	??	??
BH18	320607	6252806	12	ALScontours	RES2005	2	10	0.4	11.6	??	??
BH19	320568	6252787	11.5	ALScontours	RES2005	2	9.5	0.4	11.1	??	??
BH20	320523	6252768	10.4	ALScontours	RES2005	0	10.4	>0.0	<10.4	??	??
BH21	320492	6252753	10.4	ALScontours	RES2005	2	8.4	1.6	8.8	??	??
BH22	320526	6252989	10.7	ALScontours	RES2005	2	8.7	0.2	10.5	??	??
BH23	320584	6252867	11.4	ALScontours	RES2005	2	9.4	0.7	10.7	??	??
BH24	320570	6252896	11.7	ALScontours	RES2005	2	9.7	0.2	11.5	??	??
BH25	320555	6252929	11.5	ALScontours	RES2005	2	9.5	0.2	11.3	??	??
BH26	320539	6252959	11.2	ALScontours	RES2005	2	9.2	0.2	11.0	??	??
BH27	320598	6252834	11.2	ALScontours	RES2005	2	9.2	0.2	11.0	??	??
BH28	320570	6252995	11.5	ALScontours	RES2005	0.7	10.8	>0.7	<10.8	??	??
BH29	320577	6252981	11.5	ALScontours	RES2005	0.8	10.7	>0.8	<10.7	??	??
RG1	320438	6252727	10.1	ALScontours	RES2005	4.3	5.8	3.8	6.3	??	??
RG2	320426	6252756	10.2	ALScontours	RES2005	5.3	4.9	4.0	6.2	??	??
RG3	320463	6252738	10.2	ALScontours	RES2005	4.8	5.4	4.0	6.2	??	??
RG4/MW1	320431	6252800	10.4	ALScontours	RES2005	5.3	5.1	4.0	6.4	??	??
RG5	320577	6252822	10.9	ALScontours	RES2005	2	8.9	>2.0	<8.9	??	??
RG6	320549	6252888	11.5	ALScontours	RES2005	0.6	10.9	>0.6	<10.9	??	??
RG7	320533	6252923	11.4	ALScontours	RES2005	2.3	9.1	>2.3	<9.1	??	??
RG8	320519	6252949	11	ALScontours	RES2005	2.5	8.5	>2.5	<8.5	??	??
RG9	320504	6252979	10.7	ALScontours	RES2005	2.5	8.2	>2.5	<8.2	??	??
RG10	320562	6252856	11.4	ALScontours	RES2005	0.9	10.5	>0.9	<10.5	??	??
RG11	320394	6252968	7.8	ALScontours	RES2005	1.8	6	>1.8	<6.0	??	??
RG12	320430	6252983	10	ALScontours	RES2005	3.8	6.2	0.0	10.0	??	??
RG13	320609	6252894	11.9	ALScontours	RES2005	2.5	9.4	0.4	11.5	??	??
RG14	320423	6252843	10.6	ALScontours	RES2005	5.7	4.9	2.5	8.1	??	??
RG15	320403	6252887	10.6	ALScontours	RES2005	5	5.6	4.8	5.8	??	??
RG16	320375	6252941	9.7	ALScontours	RES2005	5.7	4	4.0	5.7	??	??
RG17	320351	6252925	9.6	ALScontours	RES2005	7	2.6	2.0	7.6	??	??
RG18	320376	6252909	10.1	ALScontours	RES2005	4	6.1	3.0	7.1	??	??
RG19	320367	6252878	10.4	ALScontours	RES2005	4.5	5.9	4.0	6.4	??	??
RG20	320462	6252766	10.4	ALScontours	RES2005	4.5	5.9	2.0	8.4	??	??
RG21	320442	6252862	10.7	ALScontours	RES2005	3.7	7	2.3	8.4	??	??
RG22	320462	6252818	10.7	ALScontours	RES2005	4.5	6.2	0.7	10.0	??	??
RG23	320483	6252774	10.6	ALScontours	RES2005	4.5	6.1	2.5	8.1	??	??
RG24	320395	6252828	10.4	ALScontours	RES2005	6	4.4	1.2	9.2	??	??
RG25/MW2	320402	6252852	10.4	ALScontours	RES2005	4.5	5.9	1.0	9.4	??	??
RG26	320440	6252931	10.7	ALScontours	RES2005	2.3	8.4	1.5	9.2	??	??
RG27	320453	6252902	10.8	ALScontours	RES2005	2.2	8.6	1.5	9.3	??	??
RG28/MW3	320525	6252798	10.7	ALScontours	RES2005	4.5	6.2	2.5	8.2	??	??
RG29	320518	6252812	11	ALScontours	RES2005	4	7	3.0	8.0	??	??
RG30	320509	6252828	11	ALScontours	RES2005	3	8	2.0	9.0	??	??
RG31	320505	6252841	11.1	ALScontours	RES2005	3	8.1	1.8	9.3	??	??
RG32/MW4	320468	6252875	10.9	ALScontours	RES2005	3	7.9	1.5	9.4	??	??
RG33	320464	6252944	10.7	ALScontours	RES2005	0.8	9.9	0.2	10.5	??	??
RG34	320487	6252904	11.1	ALScontours	RES2005	3	8.1	1.5	9.6	??	??
RG35/MW5	320509	6252871	11.2	ALScontours	RES2005	6	5.2	1.0	10.2	??	??
RG36	320544	6252793	10.5	ALScontours	RES2005	4.5	6	0.5	10.0	??	??
RG37	320482	6252970	10.5	ALScontours	RES2005	1.8	8.7	0.5	10.0	??	??
RG38	320497	6252940	10.9	ALScontours	RES2005	2.4	8.5	1.0	9.9	??	??

Location ID	X MGA56 (m)	Y MGA56 (m)	Ground level (mAHD)	Source	Borelog Source	End of Hole (mbgl) (mAHD)	Base of Fill (mbgl) (mAHD)	Top of Moderate Strength Rock (mbgl) (mAHD)
RG39	320511	6252913	11.2	ALScontours	RES2005	1.5 9.7	1.0 10.2	?? ??
RG40	320527	6252878	11.3	ALScontours	RES2005	2.4 8.9	1.0 10.3	?? ??
RG41	320540	6252847	11.3	ALScontours	RES2005	2.1 9.2	1.0 10.3	?? ??
RG42	320555	6252812	10.7	ALScontours	RES2005	3 7.7	1.0 9.7	?? ??
BH16-1	320759	6252498	17.7	ALScontours	WSPJul2007	3.2 14.5	0.8 16.9	?? ??
BH16-2	320763	6252539	18.7	ALScontours	WSPJul2007	1.1 17.6	0.6 18.1	?? ??
BH16-3	320801	6252552	19.4	ALScontours	WSPJul2007	2.1 17.3	0.4 19.0	?? ??
BH16-4C	320786	6252583	19.3	ALScontours	WSPJul2007	1.3 18	0.6 18.7	?? ??
BH16-5	320738	6252522	17.7	ALScontours	WSPJul2007	1.3 16.4	1.1 16.6	?? ??
BH17-1	320715	6252534	16.7	ALScontours	WSPJul2007	1.2 15.5	0.5 16.2	?? ??
BH17-2	320711	6252577	16.7	ALScontours	WSPJul2007	1.4 15.3	1.0 15.7	?? ??
BH17-3C	320744	6252565	18.1	ALScontours	WSPJul2007	1.35 16.75	0.8 17.4	?? ??
BH17-4C	320741	6252622	17.5	ALScontours	WSPJul2007	2.05 15.45	0.9 16.6	?? ??
BH17-5C	320760	6252641	17.8	ALScontours	WSPJul2007	1.2 16.6	0.4 17.4	?? ??
BH17-6	320727	6252545	17.5	ALScontours	WSPJul2007	1.7 15.8	1.1 16.4	?? ??
BH17-7C	320758	6252658	17.9	ALScontours	WSPJul2007	1.2 16.7	0.4 17.6	?? ??
BH18-1	320679	6252550	15	ALScontours	WSPJul2007	2.4 12.6	0.4 14.7	?? ??
BH18-2C	320708	6252622	16.6	ALScontours	WSPJul2007	3.2 13.4	2.8 13.8	?? ??
BH18-3C	320719	6252621	17	ALScontours	WSPJul2007	3.85 13.15	3.1 13.9	?? ??
BH18-4	320712	6252644	16.4	ALScontours	WSPJul2007	1.2 15.2	0.2 16.2	?? ??
BH18-5	320732	6252656	17	ALScontours	WSPJul2007	1 16	0.2 16.8	?? ??
BH18-6	320744	6252682	17.6	ALScontours	WSPJul2007	1.2 16.4	0.2 17.4	?? ??
BH18-7	320692	6252598	15.9	ALScontours	WSPJul2007	2.7 13.2	1.4 14.6	?? ??
BH18-8	320701	6252620	16.5	ALScontours	WSPJul2007	3 13.5	0.4 16.1	?? ??
BH19-1	320619	6252580	12.4	ALScontours	WSPJul2007	1.2 11.2	1.0 11.4	?? ??
BH19-2	320630	6252597	13.8	ALScontours	WSPJul2007	1.85 11.95	0.1 13.7	?? ??
BH19-3C	320658	6252594	14.5	ALScontours	WSPJul2007	1.5 13	0.4 14.1	?? ??
BH19-5C	320637	6252637	13	ALScontours	WSPJul2007	2.7 10.3	2.4 10.6	?? ??
BH19-6C	320681	6252629	15.7	ALScontours	WSPJul2007	1.2 14.5	0.3 15.5	?? ??
BH19-8C	320668	6252685	14.2	ALScontours	WSPJul2007	1.6 12.6	1.2 13.0	?? ??
BH19-9C	320682	6252667	15	ALScontours	WSPJul2007	2.4 12.6	0.4 14.6	?? ??
BH20-1	320579	6252603	10	ALScontours	WSPJul2007	3.5 6.5	1.6 8.4	?? ??
BH20-2C	320586	6252638	10	ALScontours	WSPJul2007	0.65 9.35	0.3 9.7	?? ??
BH20-3C	320618	6252641	10	ALScontours	WSPJul2007	0.9 9.1	0.3 9.8	?? ??
BH20-4C	320602	6252664	10	ALScontours	WSPJul2007	1.1 8.9	0.2 9.8	?? ??
BH20-5C	320622	6252646	10	ALScontours	WSPJul2007	1 9	0.3 9.7	?? ??
BH20-6C	320639	6252663	10	ALScontours	WSPJul2007	0.85 9.15	0.6 9.4	?? ??
BH20-7C	320613	6252682	10	ALScontours	WSPJul2007	1.2 8.8	0.6 9.5	?? ??
BH20-8	320606	6252625	10	ALScontours	WSPJul2007	1.75 8.25	0.3 9.8	?? ??
BH21-1C	320538	6252634	10	ALScontours	WSPJul2007	1.9 8.1	0.3 9.7	?? ??
BH21-2C	320561	6252623	10	ALScontours	WSPJul2007	0.9 9.1	0.8 9.3	?? ??
BH21-3C	320565	6252651	10	ALScontours	WSPJul2007	0.8 9.2	0.7 9.3	?? ??
BH21-4C	320581	6252678	10.5	ALScontours	WSPJul2007	1 9.5	0.8 9.7	?? ??
BH21-5	320578	6252704	11.1	ALScontours	WSPJul2007	1 10.1	0.8 10.3	?? ??
BH22-1C	320526	6252718	9.7	ALScontours	WSPJul2007	1.35 8.35	0.8 9.0	?? ??
BH22-2C	320556	6252700	11	ALScontours	WSPJul2007	2.2 8.8	0.9 10.1	?? ??
BH22-3	320548	6252721	10.6	ALScontours	WSPJul2007	1.6 9	1.3 9.3	?? ??
BH22-4C	320534	6252692	10.6	ALScontours	WSPJul2007	2.2 8.4	1.9 8.7	?? ??
BH22-5C	320517	6252666	10.25	ALScontours	WSPJul2007	4.2 6.05	0.5 9.8	?? ??
BH23-1C	320564	6252726	11.1	ALScontours	WSPJul2007	3.2 7.9	2.7 8.4	?? ??
BH23-2C	320641	6252692	11.2	ALScontours	WSPJul2007	1.9 9.3	0.4 10.8	?? ??
BH23-3	320637	6252754	13.2	ALScontours	WSPJul2007	1.1 12.1	0.5 12.8	?? ??
BH23-4C	320608	6252716	11	ALScontours	WSPJul2007	2.95 8.05	1.3 9.7	?? ??
BH23-5	320635	6252725	11.7	ALScontours	WSPJul2007	1.2 10.5	0.3 11.4	?? ??
BH23-6	320602	6252742	11.7	ALScontours	WSPJul2007	1.35 10.35	1.4 10.4	?? ??
BH24-1	320701	6252696	15.5	ALScontours	WSPJul2007	2.5 13	1.7 13.8	?? ??
BH24-2	320658	6252733	14.3	ALScontours	WSPJul2007	2 12.3	1.7 12.6	?? ??
BH24-3	320692	6252724	15.6	ALScontours	WSPJul2007	1.8 13.8	1.5 14.1	?? ??
BH24-4	320725	6252715	17.1	ALScontours	WSPJul2007	0.7 16.4	0.3 16.8	?? ??
BH24-5	320640	6252775	14	ALScontours	WSPJul2007	2.95 11.05	1.3 12.7	?? ??
BH24-6	320675	6252765	15.4	ALScontours	WSPJul2007	3.6 11.8	0.8 14.6	?? ??
BH24-7	320710	6252753	16.7	ALScontours	WSPJul2007	1.8 14.9	0.3 16.4	?? ??
BH24-8	320689	6252795	16	ALScontours	WSPJul2007	3.8 12.2	2.6 13.4	?? ??
HA1	320507	6252649	10	ALScontours	WSPJul2007	0.3 9.7	0.2 9.8	?? ??
HA2-C	320754	6252654	17.7	ALScontours	WSPJul2007	0.45 17.25	0.4 17.4	?? ??
BH16-6	320740	6252540	18.1	ALScontours	WSPDec2007	1.5 16.6	1.0 17.1	?? ??
BH16-7	320740	6252518	17.7	ALScontours	WSPDec2007	1.3 16.4	1.0 16.7	?? ??

Location ID	X MGA56 (m)	Y MGA56 (m)	Ground level		Borelog Source	End of Hole		Base of Fill		Top of Moderate Strength Rock	
			(mAHD)	Source		(mbgl)	(mAHD)	(mbgl)	(mAHD)	(mbgl)	(mAHD)
BH17-8C	320736	6252556	18	ALScontours	WSPDec2007	3.2	14.8	2.8	15.2	??	??
BH17-9	320718	6252548	17.2	ALScontours	WSPDec2007	1.8	15.4	1.2	16.0	??	??
BH17-10	320723	6252538	17.3	ALScontours	WSPDec2007	1.85	15.45	1.6	15.8	??	??
BH19-7C	320655	6252663	14.1	ALScontours	WSPDec2007	2.2	11.9	1.9	12.2	??	??
BH19-9C	320682	6252667	15	ALScontours	WSPJul2007	2.4	12.6	0.4	14.6	??	??
BH19-10C	320667	6252644	14.9	ALScontours	WSPDec2007	1.2	13.7	1.0	13.9	??	??
BH24-9	320682	6252775	15.4	ALScontours	WSPDec2007	2.3	13.1	2.0	13.4	??	??
BH24-10	320686	6252761	15.7	ALScontours	WSPDec2007	3	12.7	2.7	13.0	??	??
BH24-11	320671	6252757	15	ALScontours	WSPDec2007	2.7	12.3	2.4	12.6	??	??
BH24-12	320668	6252771	15.1	ALScontours	WSPDec2007	3	12.1	2.7	12.4	??	??
DP1	320687	6252782	15.7	ALScontours	DP2006	9.9	5.8	0.9	14.8	1.6	14.1
DP2	320655	6252739	14.2	ALScontours	DP2006	10.05	4.15	0.9	13.3	2.0	12.2
DP4	320680	6252701	14.6	ALScontours	DP2006	10.25	4.35	0.8	13.8	2.2	12.4
DP5	320623	6252770	12.8	ALScontours	DP2006	10.12	2.68	1.2	11.7	1.9	10.9
DP6	320532	6252717	10.1	ALScontours	DP2006	9.68	0.42	0.2	9.9	1.8	8.4
DP7	320636	6252662	10	ALScontours	DP2006	9.7	0.3	0.5	9.5	0.8	9.2
DP8	320534	6252634	10	ALScontours	DP2006	9.73	0.27	1.0	9.0	4.0	6.0
DP9	320624	6252604	13.7	ALScontours	DP2006	9.75	3.95	0.7	13.0	1.4	12.3
DP10	320753	6252646	17.6	ALScontours	DP2006	10	7.6	0.4	17.2	1.3	16.3
DP11	320714	6252664	16.4	ALScontours	DP2006	9.8	6.6	1.5	15.0	3.7	12.8
DP12	320707	6252614	16.6	ALScontours	DP2006	9.9	6.7	0.8	15.8	3.3	13.3
DP13	320687	6252574	15.6	ALScontours	DP2006	9.8	5.8	0.5	15.2	2.4	13.3
DP14	320745	6252507	17.7	ALScontours	DP2006	10.1	7.6	0.8	17.0	2.3	15.4
DP15	320787	6252553	19.1	ALScontours	DP2006	10.15	8.95	0.4	18.8	1.7	17.4
13-BH01	320446	6252693	7	ALScontours	WSP_Mar2013	4	3	0.7	6.3	>4.0	<3.0
13-BH02	320281	6252784	4.5	ALScontours	WSP_Mar2013	5	-0.5	1.3	3.2	>5.0	<-0.5
13-BH03	320308	6252836	6	ALScontours	WSP_Mar2013	2.4	3.6	>2.4	<3.6	??	??
13-BH04	320359	6252828	10	ALScontours	WSP_Mar2013	8	2	4.1	5.9	>8.0	<2.0
13-BH05/MW07	320413	6253005	6	ALScontours	WSP_Mar2013	8	-2	0.6	5.4	7.6	-1.6
13-BH07	320467	6252995	10.2	ALScontours	WSP_Mar2013	2	8.2	0.3	9.9	>2.0	<8.2
13-BH08	320561	6253054	11.7	ALScontours	WSP_Mar2013	2	9.7	0.3	11.4	>2.0	<9.7
13-BH09	320471	6253089	5.5	ALScontours	WSP_Mar2013	2	3.5	0.4	5.1	>2.0	<3.5
13-BH10	320506	6253182	6	ALScontours	WSP_Mar2013	2	4	0.5	5.6	>2.0	<4.0
13-BH11/MW09	320372	6253311	5.8	ALScontours	WSP_Mar2013	6	-0.2	0.8	5.0	>6.0	<-0.2
13-BH12	320286	6253229	4.7	ALScontours	WSP_Mar2013	4	0.7	1.9	2.8	>4.0	<0.7
13-BH13	320235	6253222	4.5	ALScontours	WSP_Mar2013	8	-3.5	1.8	2.7	>8.0	<-3.5
13-BH14	320352	6253193	4.8	ALScontours	WSP_Mar2013	4	0.8	2.7	2.1	>4.0	<0.8
13-BH15	320211	6253078	4	ALScontours	WSP_Mar2013	6	-2	1.0	3.0	>6.0	<-2.0
13-BH17/MW08	320100	6253001	4	ALScontours	WSP_Mar2013	6.5	-2.5	0.4	3.6	>6.5	<-2.5
13-BH19	320179	6252906	4.2	ALScontours	WSP_Mar2013	8	-3.8	0.7	3.5	>8.0	<-3.8
13-BH20/MW06	320215	6252844	4.3	ALScontours	WSP_Mar2013	7.3	-3	0.7	3.6	>7.3	<-3.0

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