APPENDIX F

Preliminary Contamination Assessment

Douglas Partners
Geotechnics / Environment / Groundwater

Integrated Practical Solutions

Report on
Preliminary Contamination Assessment

Wagga Wagga Base Hospital Redevelopment,
Phase 2/3, Portion A and Proposed Loading Dock
Edward Street, Wagga Wagga

Prepared for
Health Infrastructure

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

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Executive Summary

This report presents the results of a Preliminary Contamination Assessment undertaken by Douglas Partners Pty Ltd (DP) for the redevelopment currently underway at Wagga Wagga Base Hospital, Wagga Wagga NSW. The work was undertaken for Health Infrastructure in accordance with DP's proposal SYD120971 dated 26 September 2012 and subsequent variations.

It is understood that the redevelopment project will involve the progressive demolition and redevelopment of majority of the existing hospital buildings. The next phases of the project are the Acute Hospital, understood to be a new, eight-storey building (Phase 2) and demolition of existing multi-storey ward building and construction of car parking in its place (Phase 3).

Separate, smaller additions are also proposed at the hospital (under the provision of the Infrastructure SEPP), including a new single storey mortuary and two-storey central energy plant (CEP) building ("Portion A") as well as a new loading dock to Docker Street.

The locations of the proposed redevelopment areas are indicated on Drawing 1 in Appendix B.

This report has been prepared as a summary report for the purpose of development application for the Phase 2/3 area, and to inform the Review of Environmental Factors (REF) for Portion A and the proposed loading dock area. The assessment was carried out in conjunction with a supplementary geotechnical investigation, which has been reported separately (refer DP report 72320.06, dated 30 November 2012).

This Preliminary Contamination Assessment was undertaken to provide information on contaminant levels that may be present at the above listed areas within the hospital site as a result of previous site activities. The assessment was based on a review of existing information, and limited supplementary sampling and analysis, and was intended to give an indication of the likely sources and nature of contamination at the site, rather than to fully characterise the site in accordance with the NSW EPA's *Sampling Design Guidelines* (1995). Where full site characterisation is required, further sampling and analysis to meet the sampling density requirements would be recommended, targeting areas where no contamination sampling and analysis has been carried out (i.e. currently inaccessible areas).

A review of the historical aerial photographs, site walkover survey and field observations indicate that the majority of the site was developed into a hospital in the early 1900s. A baseline archaeological assessment report indicated that the site was unoccupied prior to the construction of the hospital.

Information supplied by the building contractor after the current field work was carried out indicates the presence (both past and current) of USTs on the site (Portion A and the proposed loading dock area), which have not been targeted by the limited sampling regime completed to date. BH 304, however, was located close to the apparent location of the previous USTs, and did not encounter deep filling or hydrocarbon-affected soils, nor did the sample subject to laboratory analysis (0.1 – 0.2 m) detect hydrocarbons above the laboratory PQL. It is anticipated that the bore did not penetrate the tank pit that is likely to be present.

The limited sampling regime carried out to date includes eight, four and one boreholes drilled within the Phase 2/3, Portion A and proposed loading dock respectively, with ten and six samples of filling and natural soils from the Phase 2/3 and Portion A areas respectively subject to laboratory analysis for a suite of common contaminants. The results of the sampling indicated that there are no significant

filled areas on the site, and the laboratory analysis did not identify any contaminants exceeding the adopted site criteria. Further, sampling and analysis of the groundwater beneath the broader site did not identify any significant contamination.

Phase 2/3

On the basis of the previous land uses, lack of significant fill across the site, chemical analysis of a limited number of soil samples and no asbestos observed on the site or detected by the laboratory, it is considered that the Phase 2/3 areas is suitable for continuing hospital use. The following recommendations are made regarding the proposed redevelopment works:

- As the existing buildings proposed for demolition present a potential source of contamination (i.e. asbestos and lead) it is recommended that hazardous materials assessments of the buildings should be undertaken prior to demolition to identify any building materials requiring particular management / disposal in order to prevent contamination occurring during demolition works; and
- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

Portion A

On the basis of the previous land uses, lack of significant fill across the site, chemical analysis of a limited number of soil samples and no asbestos observed on the site or detected by the laboratory, it is considered that Portion A can be made suitable for continuing hospital use, subject to the following recommendations:

- Investigation of the tank pits (from the UST's which have been removed) in accordance with the *Underground Petroleum Storage Systems Regulation 2008* and EPA NSW endorsed contamination guidelines, including remediation and validation (where necessary)*;*
- As the existing buildings proposed for demolition present a potential source of contamination (i.e. asbestos and lead) it is recommended that hazardous materials assessments of the buildings should be undertaken prior to demolition to identify any building materials requiring particular management / disposal in order to prevent contamination occurring during demolition works; and
- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

Proposed Loading Dock Area

On the basis of the previous land uses, lack of significant fill across the site, and no asbestos observed on the site, it is considered that the proposed loading dock area can be made suitable for continuing hospital use, subject to the following recommendations:

- Investigation of the existing underground diesel tank at the site in accordance with the *Underground Petroleum Storage Systems Regulation 2008* and EPA NSW endorsed contamination guidelines, including remediation and validation (where necessary). If the UST is to be retained, this should also be in accordance with the *Underground Petroleum Storage Systems Regulation 2008;* and

- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

Report on Preliminary Contamination Assessment
Wagga Wagga Base Hospital Redevelopment, Phase 2/3, Portion A and Proposed Loading Dock
Wagga Wagga Base Hospital, Edward Street, Wagga Wagga

1. Introduction

This report presents the results of a Preliminary Contamination Assessment undertaken by Douglas Partners Pty Ltd (DP) for the redevelopment currently underway at Wagga Wagga Base Hospital, Wagga Wagga NSW. The work was undertaken for Health Infrastructure in accordance with DP's proposal SYD120971 dated 26 September 2012 and subsequent variations.

It is understood that the redevelopment project will involve the progressive demolition and redevelopment of majority of the existing hospital buildings. The next phases of the project are the Acute Hospital, understood to be a new, eight-storey building (Phase 2) and demolition of existing multi-storey ward building and construction of car parking in its place (Phase 3).

Separate, smaller additions are also proposed at the hospital (under the provision of the Infrastructure SEPP), including a new single storey mortuary and two-storey central energy plant (CEP) building ("Portion A") and a new loading dock to Docker Street.

The locations of the proposed redevelopment areas are indicated on Drawing 1 in Appendix B.

This Preliminary Contamination Assessment was undertaken to provide information on contaminant levels that may be present at the above listed areas within the hospital site as a result of previous site activities. The assessment was based on a review of existing information, and limited supplementary sampling and analysis.

This report has been prepared as a summary report for the purpose of development application for the Phase 2/3 area, and to inform the Review of Environmental Factors (REF) for Portion A and the proposed loading dock area. A provisional waste classification based on the available data has also been included within this report. The assessment was carried out in conjunction with a supplementary geotechnical investigation, which has been reported separately (refer DP report 72320.06, dated 30 November 2012).

2. Background

DP has had continuing involvement with the Wagga Wagga Base Hospital redevelopment and has completed the following contamination / waste classification assessments on the site for Health Infrastructure:

- *Preliminary Contamination Assessment, Proposed Redevelopment, Wagga Wagga Base Hospital, Edward Street, Wagga Wagga, NSW*; reference 72320.01, dated May 2011 (DP 2011a).

Including environmental sampling from BH 101 to 108, and two groundwater wells (BH 101 and 106).

- *Supplementary Geotechnical Investigation Proposed Redevelopment, Wagga Wagga Base Hospital, Edward Street, Wagga Wagga, NSW;* reference 72320.03, dated October 2011 (DP 2011b). Included environmental sampling from BH 201 to 211 for preliminary waste classification.
- *Summary of Contamination, Proposed Phase 1 Redevelopment Area, Wagga Wagga Base Hospital, Edwards Street, Wagga Wagga NSW;* reference 72320.05, dated May 2012 (DP 2012).

In addition to the above, several geotechnical investigations and/or construction inspections have also been carried out by DP for the redevelopment. The locations of all intrusive investigations to date (i.e boreholes and cone penetration tests) are shown on Drawing No. 1, included in Appendix B. Specific details are available in the individual reports.

3. Site Description

The site for the proposed redevelopment is located within the existing hospital complex at Edward Street (Sturt Highway), Wagga Wagga. The three areas which are the subject of the current preliminary assessment are indicated in Drawing No. 1.

Phase 2/3 area is currently occupied by existing ambulance bay and other hospital infrastructure along the eastern boundary (which is boarded by Lewis Drive), access roads and out-buildings to the west, and existing, multi-storey hospital buildings to the north. The area covers approximately 10,000 m^2.

Portion A is directly to the south of the Phase 2/3 area and is bordered by Rawson Avenue to the south. The area is currently occupied by the existing laundry and boiler room as well as some workshops to the east, and access and parking areas, with some minor landscaping areas, to the north. The area covers approximately 3,500 m^2.

The proposed loading dock area is accessed by Docker Street to the west, and is bound by Lewis House to the south, and Harvey House and the CSB building to the north. The area is currently occupied by landscaped areas, and covers approximately 2,000 m^2.

The site generally slopes down to the north.

4. Geology and Hydrogeology

Reference to the Wagga Wagga 1:250 000 Geological Series Sheet (SI 55-15) indicates that the northern half of the site is underlain by unconsolidated sand, silt, clay and gravel (floodplain sediments) and includes high-level Tertiary aged terrace sediments of the Murray Valley comprising gravel, sand, silt and clay. The southern half of the site is shown to be underlain by the Wagga Marginal Base Formation comprising shale, slate, quartzite, sandstone and sub-graywacke.

The field work confirmed the presence of alluvial clays, sands and gravels extending to over 25 m depth.

A groundwater bore search of the NSW Office of Water database was conducted. At least 42 groundwater bores were identified within a 500 m radius of the site. Work summaries from the nearest surrounding bores indicated that the authorised and intended purposes of the groundwater bores were for dewatering, monitoring, recreational and domestic purposes. The domestic bore is located approximately and 650 m north east, down-hydraulic-gradient of the site.

Regional groundwater and surface water is expected to flow in the north-east direction towards the Murrumbidgee River. Groundwater was observed at a depth of around 6.3 m (176.3 m RL) during the previous investigations.

5. Historical Information

A review of site history information was conducted as part of the Preliminary Contamination Assessment for the whole hospital (DP 2011a). The review included historical aerial photos, a baseline archaeological assessment report, a WorkCover NSW Dangerous Goods database search, and a search for regulatory Notices (issued under *Contaminated Land Management* (CLM) *Act* 1997 and *Protection of the Environment Operations* (POEO)) *Act* 1997. The relevant information is included below.

Information recently supplied by the building contractors for the project (Hansen Yuncken) has also been considered.

5.1 Aerial Photographs

Selected historical aerial photographs for eight years (1944, 1953, 1971, 1980, 1985, 1990, 2001 & 2010) were reviewed to establish the changes to the physical features of the hospital over the years. The Wagga Wagga Base Hospital – Baseline Archaeological Assessment report by Archaeological and Management Solutions Pty Ltd, dated January 2011 was also used as reference for identifying buildings.

The 1944 aerial photograph shows that the hospital has been developed with the majority of the buildings were already existing. The notable feature is the presence of residential buildings along the east, across Lewis Drive. The surrounding land use appears to be residential in nature.

The 1953 aerial photograph shows that no discernible changes occurred since the 1944 aerial photo other than the increase in residential buildings to the north and south-west of the hospital.

The 1971 aerial photograph shows that the hospital has been redeveloped to include several building extensions including the east wing of the main hospital, nurses home extension, and new buildings to the south. No significant changes to the surrounding land use is observed since the 1953 aerial photograph.

Whilst the 1980 aerial photograph is not clear, it appears that there is no significant change that occurred within the hospital grounds since the 1971 aerial photograph. Similarly, the surrounding land use appears to have not undergone any significant development.

The 1985 photograph shows some residential buildings adjacent to Lewis Drive appear to have been demolished. Several buildings can now be seen south of the hospital. These buildings are noted to have been used as workshop, laundry and boiler house. No significant changes to the surrounding land use is observed since the 1980 aerial photograph.

The 1990 aerial photograph shows more residential buildings adjacent to Lewis Drive have been demolished and the area converted into car parks. New buildings to the south west and to the south east appear to have been constructed between 1985 and 1990.

The 2001 aerial photograph shows more residential buildings adjacent to Lewis Drive appear to have been demolished since the 1990 aerial photograph. A new building located at the centre of the site has been constructed between 1990 and 2001.

The 2010 aerial photograph shows no significant change to the hospital has occurred since the 2001 aerial photograph with the exception of the construction of a building in front of Robinson House located west of the main hospital building.

5.2 NSW WorkCover Dangerous Goods Database

A search of the NSW WorkCover dangerous goods database indicated that there were no registered dangerous goods storage depots at the subject site other than liquid oxygen.

Information supplied by the building contractors for the project (including anecdotal information understood to be gathered from hospital staff, as well as drawings, not previously made available to DP) indicated that two underground storage tanks (UST) containing fuel oil may have previously been located adjacent to the engineering workshop in the south-east of the site (Portion A). It has been suggested that the tanks have been removed, however no information is available pertaining to the volume of the tanks, date of removal, or removal/reinstatement process.

Further, anecdotal information indicates that a UST storing diesel to supply the hospital backup generator (i.e. currently in use) is located in the loading dock area, to the south of the CSB building. It is understood that the tank may have been installed circa 2000, however no records or drawings regarding dates, size or installation methods of the tanks have been made available to DP at the time of reporting. In this regard, it is noted that diesel tanks less than 10,000 L in volume are not required to be registered with WorkCover.

The approximate locations of the current and previous USTs are indicated on Drawing No. 1, (Appendix B), as inferred from the available information.

5.3 Contaminated Land Record

The NSW EPA's Register of Notices issued under the *Contaminated Land Management Act (CLM)*, 1997, was searched on 25 March, 2011 (and again on 27 November 2012). The search of the NSW EPA's database indicated that two environmental protection licences have been issued by the NSW EPA within 500 m from the Site. These two licences related to the hazardous and/or industrial and/or Group A waste generated by Wagga Wagga Base Hospital and Calvary Hospital. According to the NSW EPA's website both licences are no longer in force.

There are no Notices or Orders issued under the CLM Act by the NSW EPA with respect to the hospital site.

6. Selected Comparative Guidelines

Soil contaminant threshold concentrations for commercial (hospital) sites were sourced from the NSW EPA's *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme* (2006) health-based investigation levels (HIL) and *Guidelines for Assessing Service Station Sites* (1994).

The adopted groundwater investigation levels (GIL) at the site were based on the *Australian Drinking Water Guidelines* (NHMRC, 2004) and the *Australian and New Zealand Guidelines for Fresh and Marine Water Quality* (ANZECC, 2000) using 95% protection level for moderately disturbed ecosystems (freshwater). Selection of the groundwater investigation level (GIL) for a fresh water ecosystem was based on the proximity of the site to a sensitive surrounding surface water receptor (i.e. the Murrumbidgee River). In the case of total petroleum hydrocarbons (TPH), the *Airport (Environment Protection) Regulations' (1997), Schedule 2 Water Pollution Accepted Limits*: Table 1.03 – Accepted limits of contamination, have been applied as screening criteria.

The quantitative site assessment criteria are shown in Tables 1 and 2.

Table 1: Adopted Quantitative Site Assessment Criteria (SAC) and Groundwater Investigation Level (GIL) for Organic Compounds

Contaminant	Site Assessment Criteria (mg/kg)	Groundwater Investigation Level (µg/L)
Total Recoverable Hydrocarbons	65 (C_6-C_9) & 1,000 (C_{10}-C_{36})	150 (C_6-C_9) & 600 (C_{10}-C_{36})
Benzene	1	1
Toluene	50	800
Ethyl Benzene	130	300
Xylene	25	600
Polycyclic Aromatic Hydrocarbons	100	Various
Benzo(a)pyrene	5	0.01
Organochlorine Pesticides	Various	Various
Organophosphorus Pesticides	Not established	Not established
Polychlorinated Biphenyls	20	Various
Phenol	42500	2

Table 2: Adopted Quantitative Site Assessment Criteria and Groundwater Investigation Levels for Heavy Metals (mg/kg)

Contaminant	Site Assessment Criteria (mg/kg)	Groundwater Investigation Level (µg/L)
Arsenic	500	7
Cadmium	100	2
Chromium	400	50
Copper	5,000	2000
Lead	1500	10
Mercury	75	1
Nickel	3000	20
Zinc	35,000	8

7. Field Work Methods

The current field work was carried out concurrently with cone penetration testing (CPT) for ongoing geotechnical investigation at the site. Shallow boreholes (BH 301 to BH 307) were excavated at each CPT location to check for services, using a combination of hand tools and water blast/vacuum truck techniques. The boreholes were drilled to a depth of 1.2 m, and terminated within the natural clay soils.

The test locations are shown on Drawing No. 1 (Appendix B), along with the previous test locations (DP 2011a and 2011b). The current test locations were chosen by the client in order to supplement existing information on the site for both geotechnical and contamination purposes. The ground surface levels at the test locations were estimated using information contained on a survey drawing provided by the client. As no information relating the UST's at the site was available at the time that the field work was carried out, no boreholes were positioned in order to target potential contamination associated with former/existing UST's. BH 304 was located directly to the north of the location of the previous oil USTs within Portion A, as indicated on the drawings provided.

Soil sampling for contamination assessment purposes was performed in general accordance with the standard sampling procedures outlined in the *Douglas Partners Field Procedures Manual*. All sampling data were recorded on chain of custody information sheets. The sampling generally included:

- Soil sampling using disposable and/or decontaminated equipment;
- Placement of samples into laboratory prepared jars and immediate capping;
- Labelling of sample containers with individual and unique markings including project number, sample location, sample depth and date of sampling; and
- Storage of sample containers in a cooled, insulated and sealed container for transport to the laboratory.

Samples were selected for laboratory testing from areas of the current subject site that have previously not been subject the sampling and analysis for environmental purposes (BH 301 to BH 304, located predominantly within Portion A). The selected samples were analysed for a common suite of contaminants listed in Section 9.

8. Field Work Results

Details of the conditions encountered during the previous and current investigations within the Phase 2/3 area, Portion A and proposed loading dock are presented on the borehole logs, provided in Appendix C, together with notes defining classification methods and descriptive terms.

The boreholes and CPTs generally encountered filling over alluvial clay and sand. The subsurface conditions may be generally summarised as follows:

- **PAVEMENTS:** encountered at most bore locations comprised asphaltic concrete over roadbase with a combined pavement thickness of between 0.1 m and 0.2 m. A concrete slab approximately 200 mm thick was also encountered at BH 303;
- **TOPSOIL:** encountered in several bores to depths of between 0.1 m and 0.7 m. The topsoil generally comprised sandy silt and silty clay;
- **FILLING:** typically limited to pavement and topsoil (described above) with the exception of BH 107, 306, 209 and 211 which encountered filling to depths of 0.4 m to 2.4 m comprised silty clay filling with some building rubble (tiles and concrete fragments), silt and sand;
- **SILTY/SANDY CLAY:** silty clay and some sandy clay with some gravel bands encountered in all test locations to depths of 7.0 m to 34 m.

No obvious signs of contamination (e.g. staining or odour) were noted within the filling or natural soils sampled.

During April and September 2011, free groundwater was observed during augering (or after leaving the boreholes open for a 12-hour period) in borehole BH107A at a depth of 13.10 m. The use of water during washbore drilling prevented the measurement of groundwater in other boreholes below depths of around 8.50 m.

Water levels within the standpipes in boreholes BH101 and BH106 were recorded after completion of the drilling and "bailing out" the standpipes. The water level measurements are given in Table 3.

Table 3: Standing Water Levels in Standpipes

Borehole	Surface RL	Water Level Measurements		
	(m AHD)	Date	Depth (m)	RL (m AHD)
BH101	183.0	31.3.11 7.4.11 20.9.11	6.6 6.7 7.3	176.4 176.3 175.7
BH106	182.6	6.4.11 20.9.11	6.3 5.8	176.3 176.8

Groundwater was not encountered during the current investigation. It should be noted that groundwater measurements should only be considered accurate on the date of the measurement, and should be expected to fluctuate both seasonally and climatically.

9. Laboratory Testing

Envirolab Services Pty Ltd was commissioned to undertake analysis of the soil samples. A summary of the results of the soil analysis is provided in Tables 4 and 5 for areas Phase 2/3 and Portion A respectively. Table 6 provides a summary of the results of the groundwater analysis carried out in 2011. A brief discussion of the results is also given.

Table 4: Summary of Results for Soil Analysis (mg/kg) - Phase 2/3 Area

Contaminant	BH101 0.1-0.2 m	BH10 2.0-2.2 m	BH107 1.9-2.0 m	BH107 2.2-2.4 m	BH107A 5-1.6 m	BH108 0.1-0.2 m	BH209 0.1-0.2 m	BH210 1.0-1.2 m	BH3030 1-0.2 m	BH30 1.0-1.2 m
	Filling	Natural	Filling	Filling	Natural	Filling	Filling	Natural	Filling	Natural
TRH (C_6 to C_9)	<25	<25	<25	-	-	<25	<25	<25	<25	<25
TRH (C_{10} to C_{36})	<250	<250	<250	-	-	<250	<250	<250	<250	<250
Benzene	<0.2	<0.2	<0.2	-	-	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.5	<0.5	<0.5	-	-	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Benzene	<1	<1	<1	-	-	<1	<1	<1	<1	<1
Xylene	<3	<3	<3	-	-	<3	<3	<3	<3	<3
Polycyclic Aromatic Hydrocarbons	2.54	<1.5	<1.5	<1.5	<1.5	<1.5	9.45	<1.5	<1.5	<1.5
Benzo(a) pyrene	0.24	<0.05	<0.05	<0.05	<0.05	<0.05	0.75	<0.05	<0.05	<0.05
Organochlorine Pesticides	<2	<2	<2	-	-	<2	<2	<2	<2	<2
Organo-phosphorus Pesticides	<0.8	<0.8	<0.8	-	-	<0.8	<0.8	<0.8	<0.8	<0.8
Polychlorinated Biphenyls	<0.7	<0.7	<0.7	-	-	<0.7	<0.7	<0.7	<0.7	<0.7
Phenol	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
VOC	-	<PQL	-	<PQL	-	-	-	-	-	-
Arsenic	8	8	9	6	6	5	10	5	<4	8
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	17	29	22	14	26	8	13	18	13	30
Copper	25	18	15	8	14	8	-	-	10	23
Lead	64	13	14	13	12	5	81	64	18	12
Mercury	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.3	0.2
Nickel	12	13	14	9	11	4	19	15	9	22
Zinc	120	25	29	23	23	12	-	-	53	35

Note: PQL = practical quantitate limit, or laboratory limit of reporting

Table 5: Summary of Results for Soil Analysis (mg/kg) – Portion A

Contaminant	BH211 0.3 - 0.4 m	BH211 0.6 - 0.7 m	BH301 0.1 - 0.2 m	BH301 1.0 - 1.2 m	BH302 0.1 - 0.2 m	BH304 0.1 - 0.2 m
	Filling	Filling	Filling	Natural	Filling	Filling
TRH (C_6 to C_9)	<25	<25	<25	<25	<25	<25
TRH (C_{10} to C_{36})	<250	<250	<250	<250	<250	<250
Benzene	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethyl Benzene	<1	<1	<1	<1	<1	<1
Xylene	<3	<3	<3	<3	<3	<3
Polycyclic Aromatic Hydrocarbons	<1.5	<1.5	<1.5	<1.5	<1.5	<1.5
Benzo(a)pyrene	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Organochlorine Pesticides	<2	<2	<2	<2	<2	<2
Organophosphorus Pesticides	<0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Polychlorinated Biphenyls	<0.7	<0.7	<0.7	<0.7	<0.7	<0.7
Phenol	<5	<5	<5	<5	<5	<5
Arsenic	<4	6	15	9	5	21
Cadmium	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	11	23	23	28	8	24
Copper	-	-	23	20	8	36
Lead	12	30	10	12	5	9
Mercury	<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Nickel	6	12	13	21	4	20
Zinc	-	-	20	23	12	50

Note: PQL = practical quantitate limit, or laboratory limit of reporting

The results of the soil analysis indicate that concentrations of heavy metals, total petroleum hydrocarbons (TPH), BTEX, polycyclic aromatic hydrocarbons (PAH), organochlorine and organophosphorus pesticides (OCP and OPP), polychlorinated biphenyls (PCB), volatile organic compounds (VOC) and total phenols in the samples analysed were either below the laboratory PQL or the adopted SAC.

In addition to the summaries provided above, asbestos was not observed in the drill returns at the time of the field work and was not detected in the samples analysed in the laboratory.

Table 6: Summary of Results for Groundwater Analysis (µg/L)

Contaminant	BH101	BH106
TRH (C_6 to C_9)	<25	27
TRH (C_{10} to C_{36})	<250	200
Benzene	<01	<01
Toluene	<1	<1
Ethyl Benzene	<1	<1
Xylene	<3	<3
Polycyclic Aromatic Hydrocarbons	<PQL	<PQL
Benzo(a)pyrene	<1	<1
Organochlorine Pesticides	<0.2	<0.2
Organophosphorus Pesticides	<0.2	<0.2
Polychlorinated Biphenyls	<0.2	<0.2
Phenol	<0.5	<0.5
Chloroform	<1	16
Arsenic	1	<1
Cadmium	0.2	0.5
Chromium	<1	<1
Copper	<1	**6**
Lead	<1	2
Mercury	<0.4	<0.4
Nickel	2	4
Zinc	4	44

Note: PQL = practical quantitate limit, or laboratory limit of reporting
BOLD indicates exceedance of the adopted GIL

The results of the groundwater analysis indicate that the concentrations of heavy metals, TPH, BTEX, PAH, OCP, OPP, PCB, VOC (reported as chloroform in Table 6) and total phenols in the samples analysed were either below the laboratory PQL or the adopted GIL with the exception of copper in monitoring well BH 106 at 6 µg/L exceeding the ANZECC 2000 guideline for the protection fresh water ecosystems at 1.4 µg/L. Background soil copper concentrations are elevated and are likely to be associated with the GIL exceedance. The concentration, however, is not uncommon in urban environments and is therefore not considered to be significant.

The detailed analytical results, sample receipts and chain of custody documentation are included in Appendix D. In order to ensure the quality of the soil and groundwater data, appropriate and adequate quality assurance and quality control (QA/QC) measures and evaluations have been incorporated into

the sampling and testing regimes of the current and previous assessments. QA/QC measures included the collection and analysis of 5% field duplicate/replicate samples and use of trip blanks and trip spikes. The results of the laboratory QA/QC procedures are provided in the laboratory reports and previous DP reports.

10. Comments

10.1 Preliminary Contamination Assessment

The Phase 2/3, Portion A and proposed loading dock areas are part of the larger Wagga Wagga Base Hospital site which has been assessed for contamination purposes by DP. This has included a desk top study into the history of the hospital site to assess the potential for contamination and limited intrusive investigations within the relevant areas, as well as other parts of the hospital site. The current assessment is intended to give an indication of the likely sources and nature of contamination at the site, rather than to fully characterise the site in accordance with the NSW EPA's *Sampling Design Guidelines* (1995). Where full site characterisation is required, further sampling and analysis to meet the sampling density requirements would be recommended, targeting areas where no contamination sampling and analysis has been carried out (i.e. currently inaccessible areas).

A review of the historical aerial photographs, site walkover survey and field observations indicate that the majority of the site was developed into a hospital in the early 1900s. A baseline archaeological assessment report indicated that the site was unoccupied prior to the construction of the hospital.

Information supplied by the building contractor after the current field work was carried out indicates the presence (both past and current) of USTs on the site (Portion A and the proposed loading dock area), which have not been targeted by the limited sampling regime completed to date. BH 304, however, was located close to the apparent location of the previous USTs, and did not encounter deep filling or hydrocarbon-affected soils, nor did the sample subject to laboratory analysis (0.1 – 0.2 m) detect hydrocarbons above the laboratory PQL. It is anticipated that the bore did not penetrate the tank pit that is likely to be present.

The limited sampling regime carried out to date includes eight, four and one boreholes drilled within the Phase 2/3, Portion A and proposed loading dock respectively, with ten and six samples of filling and natural soils from the Phase 2/3 and Portion A areas respectively subject to laboratory analysis for a suite of common contaminants. The results of the sampling indicated that there are no significant filled areas on the site, and the laboratory analysis did not identify any contaminants exceeding the adopted site criteria. Further, sampling and analysis of the groundwater beneath the broader site did not identify any significant contamination.

<u>Phase 2/3</u>

On the basis of the previous land uses, lack of significant fill across the site, chemical analysis of a limited number of soil samples and no asbestos observed on the site or detected by the laboratory, it is considered that the Phase 2/3 areas is suitable for continuing hospital use. The following recommendations are made regarding the proposed redevelopment works:

- As the existing buildings proposed for demolition present a potential source of contamination (i.e. asbestos and lead) it is recommended that hazardous materials assessments of the buildings should be undertaken prior to demolition to identify any building materials requiring particular management / disposal in order to prevent contamination occurring during demolition works; and
- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

Portion A

On the basis of the previous land uses, lack of significant fill across the site, chemical analysis of a limited number of soil samples and no asbestos observed on the site or detected by the laboratory, it is considered that Portion A can be made suitable for continuing hospital use, subject to the following recommendations:

- Investigation of the tank pits (from the UST's which have been removed) in accordance with the *Underground Petroleum Storage Systems Regulation 2008* and EPA NSW endorsed contamination guidelines, including remediation and validation (where necessary)*;*
- As the existing buildings proposed for demolition present a potential source of contamination (i.e. asbestos and lead) it is recommended that hazardous materials assessments of the buildings should be undertaken prior to demolition to identify any building materials requiring particular management / disposal in order to prevent contamination occurring during demolition works; and
- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

Proposed Loading Dock Area

On the basis of the previous land uses, lack of significant fill across the site, and no asbestos observed on the site, it is considered that the proposed loading dock area can be made suitable for continuing hospital use, subject to the following recommendations:

- Investigation of the existing underground diesel tank at the site in accordance with the *Underground Petroleum Storage Systems Regulation 2008* and EPA NSW endorsed contamination guidelines, including remediation and validation (where necessary). If the UST is to be retained, this should also be in accordance with the *Underground Petroleum Storage Systems Regulation 2008;* and
- Given the limited sampling regime, it is recommended that an Unexpected Finds protocol be developed for use by the contractor during any excavation works for the redevelopment. The protocol should address issues such as buried asbestos or further abandoned tanks/tank pits which have not been identified due to the limited nature of the intrusive investigations.

10.2 Provisional Waste Classification Assessment

Waste classification in NSW is usually undertaken in accordance with *Waste Classification Guidelines* (DECC NSW, 2008). These guidelines include the following six-step process for waste classification:

- Establish if the waste is 'special waste'.
- Establish if the waste is 'liquid waste'.
- Establish if the waste is 'pre-classified' by the EPA.
- Establish if the waste possesses hazardous characteristics.
- Determine the contaminant concentrations of the waste.
- Establish if the waste is putrescible.

Visual inspection and the laboratory analysis indicated that asbestos was not present in the soil samples tested. The soil samples did not contain clinical waste or tyres and therefore the soils on the site cannot be classified as special waste.

The samples analysed were not in liquid form and therefore could not be described as liquid waste.

The Department has pre-classified glass, plastic, rubber, bricks, concrete, building and demolition waste, and asphalt waste as General Solid Waste (non-putrescible). The materials tested were typically in a soil matrix and therefore the waste cannot be pre-classified.

The samples analysed did not possess any obvious hazardous characteristics and could not be described as hazardous waste prior to chemical analysis. All samples analysed were assessed on a visual and tactile basis as being incapable of significant biological transformation and are therefore considered to be non-putrescible.

The total concentrations of various contaminants in the samples tested were compared to the threshold criteria provided in the guidelines. The ten and six samples of filling and natural soils from the Phase 2/3 and Portion A areas respectively can therefore be classified as General Solid Waste (non-putrescible) based on the total and leachable contaminant concentrations.

It may also be necessary to undertake additional testing during construction for materials required to be taken off site. The type and extent of testing undertaken will depend on the final use or destination of the spoil, and requirements of the receiving site. In this regard, any soils excavated found to be impacted by past or current USTs on the site must be stockpiled separately and subject to additional testing.

The natural soils (not affected by past or current USTs) may be able to be described as virgin excavated natural material (VENM) pending confirmation that cross-contamination has not occurred during site works.

11. Limitations

Douglas Partners (DP) has prepared this report for a project at Wagga Wagga Base Hospital, NSW in accordance with DPs proposal dated 26 September 2012. The report is provided for the purpose(s) described in the report. It should not be used for other projects or by a third party. In preparing this report DP has necessarily relied upon information provided by the client and/or their agents.

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

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

This report must be read in conjunction with all of the attached notes (Appendix A) and should be kept in its entirety without separation of individual pages or sections. DP cannot be held responsible for interpretations or conclusions made by others unless they are supported by an expressed statement, interpretation, outcome or conclusion given in this report.

This report, or sections from this report, should not be used as a specification for a project, without review and agreement by DP. This is because this report has been written as advice and opinion rather than instructions for construction.

Douglas Partners Pty Ltd

Appendix A

About this Report

About this Report

Douglas Partners

Introduction

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

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

Copyright

Borehole and Test Pit Logs

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

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

Groundwater

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

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

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

Reports

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

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

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

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

About this Report

Site Anomalies

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

Information for Contractual Purposes

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

Site Inspection

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

Appendix B

Drawing No. 1 – Test Location Plan

Locality Plan

LEGEND

- Current Test Location (CPT & Shallow borehole)
- Previous Borehole Location (April 2011)
- Previous CPT Location (September 2011)
- Previous Borehole Location (September 2011)
- Approximate Hospital Boundary

Douglas Partners
Geotechnics / Environment / Groundwater

CLIENT: Health Infrastructure		TITLE: **Test Location Plan**	PROJECT No: 72320.06
OFFICE: Sydney	DRAWN BY: PSCH	**Wagga Wagga Base Hospital Redevelopment**	DRAWING No: 1
SCALE: As shown	DATE: 27.11.2012	**Edward Street, Wagga Wagga**	REVISION: 0

MGA

P:\72320.06 WAGGA WAGGA, Base Hospital Supplementary Geotech PM\OIDrawings\72320.06-1.dwg, 30/11/2012 10:45:56 AM

Appendix C

Results of Field Work

Sampling

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

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

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

Test Pits

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

Large Diameter Augers

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

Continuous Spiral Flight Augers

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

Non-core Rotary Drilling

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

Continuous Core Drilling

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

Standard Penetration Tests

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

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

The test results are reported in the following form.

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

  4,6,7
  N=13

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

  15, 30/40 mm

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

Dynamic Cone Penetrometer Tests / Perth Sand Penetrometer Tests

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

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

Soil Descriptions

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Description and Classification Methods

The methods of description and classification of soils and rocks used in this report are based on Australian Standard AS 1726, Geotechnical Site Investigations Code. In general, the descriptions include strength or density, colour, structure, soil or rock type and inclusions.

Soil Types

Soil types are described according to the predominant particle size, qualified by the grading of other particles present:

Type	Particle size (mm)
Boulder	>200
Cobble	63 - 200
Gravel	2.36 - 63
Sand	0.075 - 2.36
Silt	0.002 - 0.075
Clay	<0.002

The sand and gravel sizes can be further subdivided as follows:

Type	Particle size (mm)
Coarse gravel	20 - 63
Medium gravel	6 - 20
Fine gravel	2.36 - 6
Coarse sand	0.6 - 2.36
Medium sand	0.2 - 0.6
Fine sand	0.075 - 0.2

The proportions of secondary constituents of soils are described as:

Term	Proportion	Example
And	Specify	Clay (60%) and Sand (40%)
Adjective	20 - 35%	Sandy Clay
Slightly	12 - 20%	Slightly Sandy Clay
With some	5 - 12%	Clay with some sand
With a trace of	0 - 5%	Clay with a trace of sand

Definitions of grading terms used are:

- Well graded - a good representation of all particle sizes
- Poorly graded - an excess or deficiency of particular sizes within the specified range
- Uniformly graded - an excess of a particular particle size
- Gap graded - a deficiency of a particular particle size with the range

Cohesive Soils

Cohesive soils, such as clays, are classified on the basis of undrained shear strength. The strength may be measured by laboratory testing, or estimated by field tests or engineering examination. The strength terms are defined as follows:

Description	Abbreviation	Undrained shear strength (kPa)
Very soft	vs	<12
Soft	s	12 - 25
Firm	f	25 - 50
Stiff	st	50 - 100
Very stiff	vst	100 - 200
Hard	h	>200

Cohesionless Soils

Cohesionless soils, such as clean sands, are classified on the basis of relative density, generally from the results of standard penetration tests (SPT), cone penetration tests (CPT) or dynamic penetrometers (PSP). The relative density terms are given below:

Relative Density	Abbreviation	SPT N value	CPT qc value (MPa)
Very loose	vl	<4	<2
Loose	l	4 - 10	2 -5
Medium dense	md	10 - 30	5 - 15
Dense	d	30 - 50	15 - 25
Very dense	vd	>50	>25

Soil Descriptions

Soil Origin

It is often difficult to accurately determine the origin of a soil. Soils can generally be classified as:

- Residual soil - derived from in-situ weathering of the underlying rock;
- Transported soils - formed somewhere else and transported by nature to the site; or
- Filling - moved by man.

Transported soils may be further subdivided into:

- Alluvium - river deposits
- Lacustrine - lake deposits
- Aeolian - wind deposits
- Littoral - beach deposits
- Estuarine - tidal river deposits
- Talus - scree or coarse colluvium
- Slopewash or Colluvium - transported downslope by gravity assisted by water. Often includes angular rock fragments and boulders.

Symbols & Abbreviations

Douglas Partners

Introduction

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

Drilling or Excavation Methods

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

Water

▷	Water seep
▽	Water level

Sampling and Testing

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

Description of Defects in Rock

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

Defect Type

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

Orientation

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

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

Coating or Infilling Term

cln	clean
co	coating
he	healed
inf	infilled
stn	stained
ti	tight
vn	veneer

Coating Descriptor

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

Shape

cu	curved
ir	irregular
pl	planar
st	stepped
un	undulating

Roughness

po	polished
ro	rough
sl	slickensided
sm	smooth
vr	very rough

Other

fg	fragmented
bnd	band
qtz	quartz

Symbols & Abbreviations

Graphic Symbols for Soil and Rock

General


Asphalt


Road base


Concrete


Filling

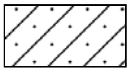
Soils


Topsoil

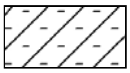

Peat


Clay

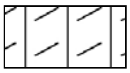

Silty clay

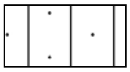

Sandy clay

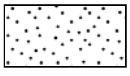

Gravelly clay

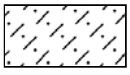

Shaly clay

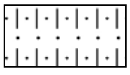

Silt


Clayey silt


Sandy silt

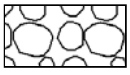

Sand

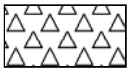

Clayey sand


Silty sand


Gravel


Sandy gravel


Cobbles, boulders

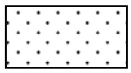

Talus

Sedimentary Rocks

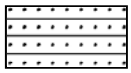

Boulder conglomerate

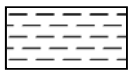

Conglomerate


Conglomeratic sandstone

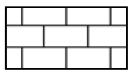

Sandstone


Siltstone


Laminite

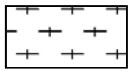

Mudstone, claystone, shale

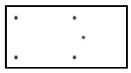

Coal


Limestone

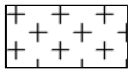
Metamorphic Rocks

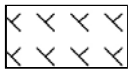

Slate, phyllite, schist

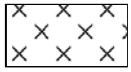

Gneiss

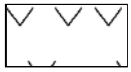

Quartzite

Igneous Rocks


Granite


Dolerite, basalt, andesite


Dacite, epidote


Tuff, breccia


Porphyry

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 183.0 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 101
PROJECT No: 72320.00
DATE: 28/3/2011
SHEET 1 OF 3

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
183	0.2	FILLING (TOPSOIL) - dark brown, sandy silt filling with rootlets, dry		E	0.1				Gatic cover
				D	0.2				Quick-set concrete
	0.5	SILTY CLAY - stiff to very stiff, brown silty clay with a trace of sand			0.3				
				E	0.5				
		SILTY CLAY - hard, red brown silty clay, dry			0.6				Bentonite
182	1				1.0				
				S			20,22,20 N = 42		
					1.45				
181	2	2.0 SILTY CLAY - very stiff, orange brown silty clay, dry		E	2.0				
					2.2				
					2.5				
				S			10,13,17 N = 30		
180	3				2.95				
179	4	4.0 SILTY CLAY - hard, orange brown silty clay with some sub-rounded ironstone gravel, dry		S	4.0		16,22,20/100mm refusal		
					4.4				
		4.5-4.7m: rounded quartz gravel							
178	5								
				S	5.5		13,24,20/100mm refusal		
177	6				5.9				
								31-03-11	
176	7	7.0 GRAVELLY SILTY CLAY - hard, orange brown, gravelly (sub-rounded ironstone and quartz gravel) silty clay, dry		S	7.0		26,28,20/100mm refusal		
					7.4				
175	8	8.0 SILTY CLAY - hard, orange brown, silty clay with a trace of ironstone gravel, moist							
				S	8.5		10,16,17 N = 33		
174	9				8.95				
	10.0				10.0				

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** HQ to 8.8m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.50m; Rotary (water) to 26.95m

WATER OBSERVATIONS: No free groundwater observed.Standpipe pumped dry on 30/3/11&4/4/11.Water level at 6.6m on 31/3/11& 6.7m on 5&7/4/11

REMARKS: Standpipe piezometer installed: Solid 0.0-6.0m; Slotted 6.0-26.95m; Bentonite plug 0.3-1.0m; Quick-set concrete 0.0-0.3m with Gatic cover

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 183.0 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 101
PROJECT No: 72320.00
DATE: 28/3/2011
SHEET 2 OF 3

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
173		SILTY CLAY - very stiff, orange brown, silty clay with some schist gravel, moist		S	10.45		10,10,12 N = 22		
172	11								11
				S	11.5 11.8		12,24 refusal (bouncing)		
171	12	11.7m: ironstone gravel band (~100mm thick)							12
170	13 13.0	SILTY CLAY - hard, grey silty clay, moist		S	13.0 13.45		13,21,23 N = 44		13
169	14								14 Backfilled with gravel
	14.54	SILTY CLAY - very stiff, red brown, silty clay with some ironstone gravel, moist		S	14.5 14.95		7,9,13 N = 22		
168	15								15
167	16 16.0	GRAVELLY SILTY CLAY - hard, red brown, gravelly (rounded quartz, schist and ironstone gravels) silty clay, moist		S	16.0 16.45		9,15,23 N = 38		16 Machine slotted PVC screen
166	17								17
				S	17.5 17.95		17,25/130mm refusal		
165	18								18
164	19 19.0	SILTY CLAY - very stiff, red brown silty clay, moist		S	19.0 19.45		7,10,14 N = 24		19

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** HQ to 8.8m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.50m; Rotary (water) to 26.95m

WATER OBSERVATIONS: No free groundwater observed.Standpipe pumped dry on 30/3/11&4/4/11.Water level at 6.6m on 31/3/11& 6.7m on 5&7/4/11

REMARKS: Standpipe piezometer installed: Solid 0.0-6.0m; Slotted 6.0-26.95m; Bentonite plug 0.3-1.0m; Quick-set concrete 0.0-0.3m with Gatic cover

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 183.0 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 101
PROJECT No: 72320.00
DATE: 28/3/2011
SHEET 3 OF 3

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	20.3	SILTY CLAY - very stiff, red brown silty clay, moist *(continued)*							
		SILTY CLAY - very stiff, red brown silty clay with some ironstone gravel, moist		S	20.5		7,10,14 N = 24		
					20.95				
				S	23.5		7,10,18 N = 28		
					23.95				
				S	26.5		10,12,20 N = 32		
	26.95				26.95				End cap
		Bore discontinued at 26.95m - target depth achieved							

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** HQ to 8.8m

TYPE OF BORING: Solid flight auger (TC-bit) to 8.50m; Rotary (water) to 26.95m

WATER OBSERVATIONS: No free groundwater observed.Standpipe pumped dry on 30/3/11&4/4/11.Water level at 6.6m on 31/3/11& 6.7m on 5&7/4/11

REMARKS: Standpipe piezometer installed: Solid 0.0-6.0m; Slotted 6.0-26.95m; Bentonite plug 0.3-1.0m; Quick-set concrete 0.0-0.3m with Gatic cover

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 107
PROJECT No: 72320.00
DATE: 6 - 7/4/2011
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182	0.07	ASPHALT - 70mm thick							
	0.4	FILLING (ROADBASE) - angular blue metal gravel and sand							
		FILLING - poorly compacted, red brown, silty clay filling with granite gravel, slag and some sand, moist		S	1.35		3,3,2 N = 5		
181	1				1.8				
				E	1.9				
	2				2.0				
	2.2			A	2.2				
180	2.4	FILLING - poorly compacted, medium grained sand filling with some clay, moist		E	2.4				
		Bore discontinued at 2.4m - hole abandoned due to obstruction							
	3								
179									
	4								
178									
	5								
177									
	6								
176									
	7								
175									
	8								
174									
	9								
173									

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: Pot holing to 1.30m; Solid flight auger to 2.40m

WATER OBSERVATIONS: No free groundwater observed whilst auger drilling

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 107A
PROJECT No: 72320.00
DATE: 7/4/2011
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182	0.07	ASPHALT - 70mm thick							
	0.4	FILLING (ROADBASE) - brown, angular blue metal gravel filling with sand, dry		E	0.4 0.5				
		SILTY CLAY - apparently very stiff, red brown silty clay, dry							
181	1								1
	1.5	SILTY CLAY - very stiff, red brown, silty clay with some ironstone gravel, dry			1.5				
				S E	1.6 1.95		7,9,18 N = 27		
180	2								2
	2.5	SILTY CLAY - stiff, red brown, silty clay with a trace of ironstone gravel, dry			2.5				
				S	2.95		6,6,8 N = 14		
179	3								3
	4.0	SILTY CLAY - very stiff, red brown, silty clay with a trace of ironstone gravel, dry			4.0				
178	4			S	4.45		5,8,14 N = 22		4
	5								5
177					5.5				
	6			S	5.95		6,9,14 N = 23		6
176	7				7.0				7
				S	7.45		4,6,11 N = 17		
175	8								8
	8.5	SILTY CLAY - stiff to very stiff, red brown and grey, silty clay, moist			8.5				
174				S	8.95		6,7,9 N = 16		
	9								9
173	10.0				10.0				

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: Pot holing to 1.2m; Solid flight auger (TC-bit) to 13.0m

WATER OBSERVATIONS: Free groundwater observed at 13.10m on SPT sampler

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 107A
PROJECT No: 72320.00
DATE: 7/4/2011
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
172	11	SILTY CLAY - hard, red brown silty clay, moist		S	10.45		9,14,30 N = 44		
171	11.5	SILTY CLAY - stiff, mottled orange brown and grey, silty clay, moist 12.0m: gravel		S	11.5 11.95		5,6,7 N = 13		
170	12								
169	13 13.0	SILTY CLAY - hard, orange brown silty clay, moist		S	13.0		8,15,19 N = 34	▼	
	13.45	Bore discontinued at 13.45m			13.45				
168	14								
167	15								
166	16								
165	17								
164	18								
163	19								

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: Pot holing to 1.2m; Solid flight auger (TC-bit) to 13.0m

WATER OBSERVATIONS: Free groundwater observed at 13.10m on SPT sampler

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.4 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 109
PROJECT No: 72320.00
DATE: 1 - 5/4/2011
SHEET 1 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182	0.4	FILLING (TOPSOIL) - poorly compacted, dark brown, silty clay filling (topsoil) with some sand, moist		E	0.1 0.2				
		SILTY CLAY - apparently stiff, orange brown silty clay, dry		B A	0.4 0.5 0.6				
181	1.0	SILTY CLAY - stiff, orange brown silty clay, dry		S	1.0 1.45		4,4,9 N = 13		
180	2			S	2.5 2.95		4,5,7 N = 12		
179	3								
178	4.0	SILTY CLAY - very stiff, orange brown silty clay, dry		S	4.0 4.45		7,11,14 N = 25		
	5	5.0m: trace of ironstone gravel							
177				S	5.5 5.95		7,10,12 N = 22		
176	6								
175	7.0	SILTY CLAY - stiff, orange brown, silty clay with a trace of ironstone gravel, dry		S	7.0 7.45		4,7,8 N = 15		
174	8								
	8.5	SILTY CLAY - hard, red brown, silty clay with a trace of ironstone gravel, dry		S	8.5 8.95		10,12,21 N = 33		
173	9								
					10.0				

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** Uncased
TYPE OF BORING: Solid flight auger (TC-bit) to 10.0m
WATER OBSERVATIONS: No free groundwater observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.4 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 109
PROJECT No: 72320.00
DATE: 1 - 5/4/2011
SHEET 2 OF 2

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	10.15	10.10m: rounded quartz gravel		S	10.15		20 refusal		
		Bore discontinued at 10.15m - target depth achieved							

RIG: Scout **DRILLER:** JS **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: Solid flight auger (TC-bit) to 10.0m

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 181.8 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 209
PROJECT No: 72320.03
DATE: 21/9/2011
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
181	0.4	FILLING - poorly compacted, brown, silty sand filling with some building rubble (bricks, quartz cobbles and glass)		D/E	0.1 0.2		PID<1		
		SILTY CLAY - hard, orange brown silty clay, moist		A	0.7 0.8				
	1			U_{50}			pp>400		
					1.1				
		- rounded ironstone gravel from 1.5m to 1.9m		A	1.5 1.6				
180	2								
					2.5				
				A	2.6				
179	3								
	3.0	Bore discontinued at 3.0m - target depth achieved							
178	4								
177									

RIG: 5 tonne Excavator **DRILLER:** John Rapley **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: 200mm diameter auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.6 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 210
PROJECT No: 72320.03
DATE: 21/9/2011
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
182	0.2	FILLING (TOPSOIL) - brown sandy silt filling, dry		E	0.1		PID<1		
		SILTY CLAY - very stiff, orange brown silty clay, dry			0.2				
				A	0.5				
	0.6	SILTY CLAY - hard, orange brown silty clay, dry			0.6				
181	1			E	1.2		PID<1		
					1.3				
180	2			A	2.2				
					2.3				
				A	2.9				
179	3	3.0 Bore discontinued at 3.0m - target depth achieved			3.0				
178	4								

Dynamic Penetrometer Test (blows per 150mm): 5, 10, 15, 20

RIG: 5 tonne Excavator **DRILLER:** John Rapley **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: 200mm diameter auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 184.2 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 211
PROJECT No: 72320.03
DATE: 21/9/2011
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Dynamic Penetrometer Test (blows per 150mm)
184	0.0								
	0.1	FILLING - poorly compacted, gravelly clay filling, dry		A/E	0.1				
		FILLING - poorly compacted, medium to coarse grained sand filling with some clay, dry		E*	0.3 0.4		PID<1		
	0.6	FILLING - poorly compacted, silty clay filling with some sand, moist		A/E*	0.6 0.7		PID<1		
183	1.1	SILTY CLAY - very stiff then hard, orange brown silty clay, dry		A	1.3 1.4				
182				A	2.8 2.9				
181	3.0	Bore discontinued at 3.0m - target depth achieved							
180									

RIG: 5 tonne Excavator **DRILLER:** John Rapley **LOGGED:** PGH **CASING:** Uncased

TYPE OF BORING: 200mm diameter auger

WATER OBSERVATIONS: No free groundwater observed

REMARKS:

☐ Sand Penetrometer AS1289.6.3.3
☒ Cone Penetrometer AS1289.6.3.2

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.9 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 301
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.03	ASPHALTIC CONCRETE							
		ROADBASE - sandy gravel roadbase		E/A	0.1				
	0.2	SILTY CLAY - orange brown silty clay			0.2				
182	1			E/A*	1.0				1
	1.2	Bore discontinued at 1.2m - target depth			1.2				
181									

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS: *BD2/ 071112

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.5 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 302
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182	0.05	ASPHALTIC CONCRETE							
	0.1	ROADBASE - sandy gravel roadbase							
		SILTY CLAY - orange brown silty clay		E/A	0.1 0.2				
	1								1
	1.2	Bore discontinued at 1.2m - target depth							
181									

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U$_x$	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.5 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 303
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182		TOPSOIL brown silty clay topsoil with trace rootlets		E/A*	0.1				
	0.2	SILTY CLAY - orange brown silty clay			0.2				
	1			E/A	1.0				1
	1.2	Bore discontinued at 1.2m - target depth			1.2				
181									

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS: *BD1/ 041112

SAMPLING & IN SITU TESTING LEGEND

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

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 183.3 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 304
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
183	0.05	ASPHALTIC CONCRETE							
		ROADBASE - sandy gravel roadbase		E/A	0.1				
	0.2	SILTY CLAY - orange brown silty clay			0.2				
	1			E/A	1.0				1
182	1.2	Bore discontinued at 1.2m - target depth			1.2				

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** CF **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U$_x$	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 183.5 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 305
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
	0.05	ASPHALTIC CONCRETE							
		ROADBASE - sandy gravel roadbase		E/A	0.1				
183	0.2	SILTY CLAY - orange brown silty clay			0.2				
	1			E/A	1.0				1
	1.2	Bore discontinued at 1.2m - target depth			1.2				
182									

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

A	Auger sample	G	Gas sample	PID	Photo ionisation detector (ppm)
B	Bulk sample	P	Piston sample	PL(A)	Point load axial test Is(50) (MPa)
BLK	Block sample	U$_x$	Tube sample (x mm dia.)	PL(D)	Point load diametral test Is(50) (MPa)
C	Core drilling	W	Water sample	pp	Pocket penetrometer (kPa)
D	Disturbed sample	▷	Water seep	S	Standard penetration test
E	Environmental sample	▼	Water level	V	Shear vane (kPa)

Douglas Partners
Geotechnics / Environment / Groundwater

BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.5 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 306
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
		CONCRETE							
182	0.2	FILLING - orange-brown silty clay filling with some sand (reworked natural material)		E/A	0.2				
	1			E/A	1.0				1
	1.2	Bore discontinued at 1.2m - target depth			1.2				
181									

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS: Located within service trench

SAMPLING & IN SITU TESTING LEGEND

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

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BOREHOLE LOG

CLIENT: Health Infrastructure
PROJECT: Wagga Wagga Base Hospital Redevelopment
LOCATION: Edward Street, Wagga Wagga

SURFACE LEVEL: 182.2 AHD
EASTING:
NORTHING:
DIP/AZIMUTH: 90°/--

BORE No: 307
PROJECT No: 72320.06
DATE: 7/11/2012
SHEET 1 OF 1

RL	Depth (m)	Description of Strata	Graphic Log	Sampling & In Situ Testing: Type	Depth	Sample	Results & Comments	Water	Well Construction Details
182		FILLING - light yellow sand filling with a trace of roadbase gravel							
	0.3	SILTY CLAY - orange-brown silty clay							
	1								1
181	1.2	Bore discontinued at 1.2m - target depth							

RIG: Sucker Truck **DRILLER:** WWDD **LOGGED:** TS **CASING:** Uncased
TYPE OF BORING: Hand tool and water blast/ vacuum truck
WATER OBSERVATIONS: No free ground water observed
REMARKS:

SAMPLING & IN SITU TESTING LEGEND

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

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Appendix D

Laboratory Test Results

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 55247

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Paul Gorman

Sample log in details:

Your Reference:	**72320.01, Wagga Wagga**		
No. of samples:	4 soils		
Date samples received / completed instructions received	11/05/11	/	11/05/11

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

Report Details:

Date results requested by: / Issue Date:	18/05/11	/	12/05/11
Date of Preliminary Report:	Not Issued		

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Results Approved By:

Alex Tam
Approved Signatory

Asbestos ID - soils					
Our Reference:	UNITS	55247-1	55247-2	55247-3	55247-4
Your Reference	----------	BH105/0.2-0.3	BH106/0.1-0.2	BH108/0.1-0.2	BH109/0.1-0.3
Type of sample	----------	Soil	Soil	Soil	Soil
Date analysed	-	12/05/2011	12/05/2011	12/05/2011	12/05/2011
Sample mass tested	g	Approx 35	Approx 35	Approx 35	Approx 35
Sample Description	-	Sandy Soil & Rock	Sandy Soil & Rock	Sandy Soil & Rock	Sandy Soil & Rock
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected	Respirable fibres not detected

Method ID	Methodology Summary
AS4964-2004	Asbestos ID - Qualitative identification of asbestos type fibres in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques.

Report Comments:

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

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.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

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CHAIN OF CUSTODY

Project Name: Wagga Wagga .....
Project No: 72320.01..... Sampler: Peter Hartcliff..... .....
Project Mgr: Paul Gorman..... Phone: 02 9809 0666 .....
Email: rene.alviar@douglaspartners.com.au .....
Date Required: Normal TAT ..... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water A - Air	Container type	Analytes: Asbestos ID							Notes
BH105/0.2-0.3	0.2-0.3	1	31.03	S	J	X							
BH106/0.1-0.2	0.1-0.2	2	05.04	S	J	X							
BH108/0.1-0.2	0.1-0.2	3	06.04	S	J	X							
BH109/0.1-0.3	0.1-0.3	4	05.04	S	J	X							

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

Job No: 55247
Date received: 11-5-11
Time received: 2pm
Received by: ES
Temp: Cool/Ambient
Cooling: Ice/icepack
Security: Intact/Broken/None

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: Rene Alviar Signed: Date & Time: Received By: E Shaw (ELS) Date & Time: 11-5-11, 2pm

Relinquished by: Signed: Date & Time: Received By: Date & Time:

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 54136

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Rene Alviar

Sample log in details:

Your Reference:	**72320.01, Wagga Wagga**
No. of samples:	24 Soils, 3 Waters
Date samples received / completed instructions received	11/04/11 / 11/04/11

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

Report Details:

Date results requested by: / Issue Date:	18/04/11 / 18/04/11
Date of Preliminary Report:	Not Issued

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Results Approved By:

Jacinta Hurst
Laboratory Manager

Nancy Zhang
Chemist

Rhian Morgan
Reporting Supervisor

Nick Sarlamis
Inorganics Supervisor

Giovanni Agosti
Technical Manager

Jeremy Faircloth
Chemist

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-3 BH101/2-2.2 30/03/2011 Soil	54136-14 BH106/1.75-2.0 5/04/2011 Soil	54136-16 BH107/2.2-2.4 7/04/2011 Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011
Dichlorodifluoromethane	mg/kg	<1	<1	<1
Chloromethane	mg/kg	<1	<1	<1
Vinyl Chloride	mg/kg	<1	<1	<1
Bromomethane	mg/kg	<1	<1	<1
Chloroethane	mg/kg	<1	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1	<1
1,1-dichloroethane	mg/kg	<1	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1	<1
bromochloromethane	mg/kg	<1	<1	<1
chloroform	mg/kg	<1	<1	<1
2,2-dichloropropane	mg/kg	<1	<1	<1
1,2-dichloroethane	mg/kg	<1	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1	<1
1,1-dichloropropene	mg/kg	<1	<1	<1
Cyclohexane	mg/kg	<1	<1	<1
carbon tetrachloride	mg/kg	<1	<1	<1
Benzene	mg/kg	<0.5	<0.5	<0.5
dibromomethane	mg/kg	<1	<1	<1
1,2-dichloropropane	mg/kg	<1	<1	<1
trichloroethene	mg/kg	<1	<1	<1
bromodichloromethane	mg/kg	<1	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1	<1
Toluene	mg/kg	<0.5	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1	<1
dibromochloromethane	mg/kg	<1	<1	<1
1,2-dibromoethane	mg/kg	<1	<1	<1
tetrachloroethene	mg/kg	<1	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1	<1
chlorobenzene	mg/kg	<1	<1	<1
Ethylbenzene	mg/kg	<1	<1	<1
bromoform	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
styrene	mg/kg	<1	<1	<1

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-3 BH101/2-2.2 30/03/2011 Soil	54136-14 BH106/1.75-2.0 5/04/2011 Soil	54136-16 BH107/2.2-2.4 7/04/2011 Soil
1,1,2,2-tetrachloroethane	mg/kg	<1	<1	<1
o-Xylene	mg/kg	<1	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1	<1
isopropylbenzene	mg/kg	<1	<1	<1
bromobenzene	mg/kg	<1	<1	<1
n-propyl benzene	mg/kg	<1	<1	<1
2-chlorotoluene	mg/kg	<1	<1	<1
4-chlorotoluene	mg/kg	<1	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1	<1
tert-butyl benzene	mg/kg	<1	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1	<1
sec-butyl benzene	mg/kg	<1	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1	<1
4-isopropyl toluene	mg/kg	<1	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1	<1
n-butyl benzene	mg/kg	<1	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1	<1
hexachlorobutadiene	mg/kg	<1	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1	<1
Surrogate Dibromofluorometha	%	89	90	110
Surrogate aaa-Trifluorotoluene	%	109	106	111
Surrogate Toluene-d_8	%	97	96	92
Surrogate 4-Bromofluorobenzene	%	95	94	72

vTRH & BTEX in Soil						
Our Reference:	UNITS	54136-1	54136-3	54136-4	54136-5	54136-6
Your Reference	----------	BH101/0.1-0.2	BH101/2-2.2	BH102/0.4-0.5	BH102/2-2.2	BH103/0.5-0.6
Date Sampled	----------	30/03/2011	30/03/2011	29/03/2011	29/03/2011	30/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	84	109	87	87	86

vTRH & BTEX in Soil						
Our Reference:	UNITS	54136-8	54136-10	54136-13	54136-15	54136-19
Your Reference	----------	BH104/0.3-0.4	BH105/0.2-0.3	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2
Date Sampled	----------	31/03/2011	31/03/2011	5/04/2011	7/04/2011	6/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	86	87	83	110	108

vTRH & BTEX in Soil		
Our Reference:	UNITS	54136-21
Your Reference	----------	BH109/0.1-0.3
Date Sampled	----------	5/04/2011
Type of sample		Soil
Date extracted	-	12/04/2011
Date analysed	-	12/04/2011
vTRH C_6 - C_9	mg/kg	<25
Benzene	mg/kg	<0.5
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	107

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	54136-1	54136-3	54136-4	54136-5	54136-6
Your Reference	----------	BH101/0.1-0.2	BH101/2-2.2	BH102/0.4-0.5	BH102/2-2.2	BH103/0.5-0.6
Date Sampled	----------	30/03/2011	30/03/2011	29/03/2011	29/03/2011	30/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
$TRHC_{10}$ - 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
Surrogate o-Terphenyl	%	87	85	86	87	87

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	54136-8	54136-10	54136-13	54136-15	54136-19
Your Reference	----------	BH104/0.3-0.4	BH105/0.2-0.3	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2
Date Sampled	----------	31/03/2011	31/03/2011	5/04/2011	7/04/2011	6/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
$TRHC_{10}$ - 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
Surrogate o-Terphenyl	%	87	87	88	88	82

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	54136-21
Your Reference	----------	BH109/0.1-0.3
Date Sampled	----------	5/04/2011
Type of sample		Soil
Date extracted	-	12/04/2011
Date analysed	-	12/04/2011
$TRHC_{10}$ - C_{14}	mg/kg	<50
$TRHC_{15}$ - C_{28}	mg/kg	<100
$TRHC_{29}$ - C_{36}	mg/kg	<100
Surrogate o-Terphenyl	%	89

PAHs in Soil						
Our Reference:	UNITS	54136-1	54136-3	54136-4	54136-5	54136-6
Your Reference	----------	BH101/0.1-0.2	BH101/2-2.2	BH102/0.4-0.5	BH102/2-2.2	BH103/0.5-0.6
Date Sampled	----------	30/03/2011	30/03/2011	29/03/2011	29/03/2011	30/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.5	<0.1	0.2	<0.1	<0.1
Pyrene	mg/kg	0.5	<0.1	0.3	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.2	<0.1	0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	0.4	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	0.24	<0.05	0.09	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	0.2	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	87	93	89	89	89

PAHs in Soil						
Our Reference:	UNITS	54136-8	54136-10	54136-11	54136-13	54136-14
Your Reference	----------	BH104/0.3-0.4	BH105/0.2-0.3	BH105/0.8-0.9	BH106/0.1-0.2	BH106/1.75-2.0
Date Sampled	----------	31/03/2011	31/03/2011	31/03/2011	5/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	1.3	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	1.3	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	0.5	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	0.6	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	0.9	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	0.61	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	0.4	<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	0.4	<0.1
Surrogate p-Terphenyl-d_{14}	%	88	85	92	87	90

PAHs in Soil						
Our Reference:	UNITS	54136-15	54136-16	54136-18	54136-19	54136-20
Your Reference	----------	BH107/1.9-2.0	BH107/2.2-2.4	BH107A/1.5-1.6	BH108/0.1-0.2	BH108/2-2.2
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011	6/04/2011	6/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05	<0.05	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	93	88	87	88	88

PAHs in Soil		
Our Reference:	UNITS	54136-21
Your Reference	----------	BH109/0.1-0.3
Date Sampled	----------	5/04/2011
Type of sample		Soil
Date extracted	-	12/04/2011
Date analysed	-	12/04/2011
Naphthalene	mg/kg	<0.1
Acenaphthylene	mg/kg	<0.1
Acenaphthene	mg/kg	<0.1
Fluorene	mg/kg	<0.1
Phenanthrene	mg/kg	0.1
Anthracene	mg/kg	<0.1
Fluoranthene	mg/kg	0.2
Pyrene	mg/kg	0.3
Benzo(a)anthracene	mg/kg	0.1
Chrysene	mg/kg	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2
Benzo(a)pyrene	mg/kg	0.09
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1
Surrogate p-Terphenyl-d_{14}	%	85

Organochlorine Pesticides in soil						
Our Reference:	UNITS	54136-1	54136-4	54136-6	54136-8	54136-10
Your Reference	----------	BH101/0.1-0.2	BH102/0.4-0.5	BH103/0.5-0.6	BH104/0.3-0.4	BH105/0.2-0.3
Date Sampled	----------	30/03/2011	29/03/2011	30/03/2011	31/03/2011	31/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	95	94	93	97

Organochlorine Pesticides in soil					
Our Reference:	UNITS	54136-13	54136-15	54136-19	54136-21
Your Reference	----------	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2	BH109/0.1-0.3
Date Sampled	----------	5/04/2011	7/04/2011	6/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	94	93	83

Organophosphorus Pesticides						
Our Reference:	UNITS	54136-1	54136-4	54136-6	54136-8	54136-10
Your Reference	----------	BH101/0.1-0.2	BH102/0.4-0.5	BH103/0.5-0.6	BH104/0.3-0.4	BH105/0.2-0.3
Date Sampled	----------	30/03/2011	29/03/2011	30/03/2011	31/03/2011	31/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	95	94	93	97

Organophosphorus Pesticides					
Our Reference:	UNITS	54136-13	54136-15	54136-19	54136-21
Your Reference	----------	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2	BH109/0.1-0.3
Date Sampled	----------	5/04/2011	7/04/2011	6/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	94	93	83

PCBs in Soil						
Our Reference:	UNITS	54136-1	54136-4	54136-6	54136-8	54136-10
Your Reference	----------	BH101/0.1-0.2	BH102/0.4-0.5	BH103/0.5-0.6	BH104/0.3-0.4	BH105/0.2-0.3
Date Sampled	----------	30/03/2011	29/03/2011	30/03/2011	31/03/2011	31/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	95	94	93	97

PCBs in Soil					
Our Reference:	UNITS	54136-13	54136-15	54136-19	54136-21
Your Reference	----------	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2	BH109/0.1-0.3
Date Sampled	----------	5/04/2011	7/04/2011	6/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	89	94	93	83

Total Phenolics in Soil						
Our Reference:	UNITS	54136-1	54136-4	54136-6	54136-8	54136-10
Your Reference	----------	BH101/0.1-0.2	BH102/0.4-0.5	BH103/0.5-0.6	BH104/0.3-0.4	BH105/0.2-0.3
Date Sampled	----------	30/03/2011	29/03/2011	30/03/2011	31/03/2011	31/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil					
Our Reference:	UNITS	54136-13	54136-15	54136-19	54136-21
Your Reference	----------	BH106/0.1-0.2	BH107/1.9-2.0	BH108/0.1-0.2	BH109/0.1-0.3
Date Sampled	----------	5/04/2011	7/04/2011	6/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil
Date extracted	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5

Acid Extractable metals in soil						
Our Reference:	UNITS	54136-1	54136-3	54136-4	54136-5	54136-6
Your Reference	----------	BH101/0.1-0.2	BH101/2-2.2	BH102/0.4-0.5	BH102/2-2.2	BH103/0.5-0.6
Date Sampled	----------	30/03/2011	30/03/2011	29/03/2011	29/03/2011	30/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Arsenic	mg/kg	8	8	7	8	9
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	17	29	26	28	28
Copper	mg/kg	25	18	21	17	18
Lead	mg/kg	64	13	22	12	14
Mercury	mg/kg	0.4	<0.1	0.1	<0.1	<0.1
Nickel	mg/kg	12	13	13	12	19
Zinc	mg/kg	120	25	61	24	40

Acid Extractable metals in soil						
Our Reference:	UNITS	54136-8	54136-10	54136-11	54136-13	54136-14
Your Reference	----------	BH104/0.3-0.4	BH105/0.2-0.3	BH105/0.8-0.9	BH106/0.1-0.2	BH106/1.75-2.0
Date Sampled	----------	31/03/2011	31/03/2011	31/03/2011	5/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Arsenic	mg/kg	9	<4	4	6	6
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	28	16	19	21	33
Copper	mg/kg	18	11	28	14	17
Lead	mg/kg	13	12	46	44	14
Mercury	mg/kg	<0.1	<0.1	1.1	0.1	<0.1
Nickel	mg/kg	15	10	11	13	22
Zinc	mg/kg	28	36	67	59	44

Acid Extractable metals in soil						
Our Reference:	UNITS	54136-15	54136-16	54136-18	54136-19	54136-20
Your Reference	----------	BH107/1.9-2.0	BH107/2.2-2.4	BH107A/1.5-1.6	BH108/0.1-0.2	BH108/2-2.2
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011	6/04/2011	6/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Arsenic	mg/kg	9	6	6	<4	7
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	22	14	26	13	29
Copper	mg/kg	15	8	14	7	17
Lead	mg/kg	14	13	12	7	15
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Nickel	mg/kg	14	9	11	9	14
Zinc	mg/kg	29	23	23	20	25

Acid Extractable metals in soil		
Our Reference:	UNITS	54136-21
Your Reference	----------	BH109/0.1-0.3
Date Sampled	----------	5/04/2011
Type of sample		Soil
Date digested	-	12/04/2011
Date analysed	-	12/04/2011
Arsenic	mg/kg	5
Cadmium	mg/kg	<0.5
Chromium	mg/kg	19
Copper	mg/kg	18
Lead	mg/kg	37
Mercury	mg/kg	0.4
Nickel	mg/kg	12
Zinc	mg/kg	89

Moisture						
Our Reference:	UNITS	54136-1	54136-3	54136-4	54136-5	54136-6
Your Reference	----------	BH101/0.1-0.2	BH101/2-2.2	BH102/0.4-0.5	BH102/2-2.2	BH103/0.5-0.6
Date Sampled	----------	30/03/2011	30/03/2011	29/03/2011	29/03/2011	30/03/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Moisture	%	20	17	10	11	11

Moisture						
Our Reference:	UNITS	54136-8	54136-10	54136-11	54136-13	54136-14
Your Reference	----------	BH104/0.3-0.4	BH105/0.2-0.3	BH105/0.8-0.9	BH106/0.1-0.2	BH106/1.75-2.0
Date Sampled	----------	31/03/2011	31/03/2011	31/03/2011	5/04/2011	5/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Moisture	%	13	10	9.4	12	12

Moisture						
Our Reference:	UNITS	54136-15	54136-16	54136-18	54136-19	54136-20
Your Reference	----------	BH107/1.9-2.0	BH107/2.2-2.4	BH107A/1.5-1.6	BH108/0.1-0.2	BH108/2-2.2
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011	6/04/2011	6/04/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	12/04/2011	12/04/2011	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011	13/04/2011	13/04/2011
Moisture	%	12	8.8	13	9.9	15

Moisture		
Our Reference:	UNITS	54136-21
Your Reference	----------	BH109/0.1-0.3
Date Sampled	----------	5/04/2011
Type of sample		Soil
Date prepared	-	12/04/2011
Date analysed	-	13/04/2011
Moisture	%	21

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-25 GW101 7/04/2011 Water	54136-26 GW106 7/04/2011 Water
Date extracted	-	13/04/2011	13/04/2011
Date analysed	-	14/04/2011	14/04/2011
Dichlorodifluoromethane	µg/L	<10	<10
Chloromethane	µg/L	<10	<10
Vinyl Chloride	µg/L	<10	<10
Bromomethane	µg/L	<10	<10
Chloroethane	µg/L	<10	<10
Trichlorofluoromethane	µg/L	<10	<10
1,1-Dichloroethene	µg/L	<1	<1
Trans-1,2-dichloroethene	µg/L	<1	<1
1,1-dichloroethane	µg/L	<1	<1
Cis-1,2-dichloroethene	µg/L	<1	<1
Bromochloromethane	µg/L	<1	<1
Chloroform	µg/L	<1	16
2,2-dichloropropane	µg/L	<1	<1
1,2-dichloroethane	µg/L	<1	<1
1,1,1-trichloroethane	µg/L	<1	<1
1,1-dichloropropene	µg/L	<1	<1
Cyclohexane	µg/L	<1	<1
Carbon tetrachloride	µg/L	<1	<1
Benzene	µg/L	<1	<1
Dibromomethane	µg/L	<1	<1
1,2-dichloropropane	µg/L	<1	<1
Trichloroethene	µg/L	<1	<1
Bromodichloromethane	µg/L	<1	<1
trans-1,3-dichloropropene	µg/L	<1	<1
cis-1,3-dichloropropene	µg/L	<1	<1
1,1,2-trichloroethane	µg/L	<1	<1
Toluene	µg/L	<1	3
1,3-dichloropropane	µg/L	<1	<1
Dibromochloromethane	µg/L	<1	<1
1,2-dibromoethane	µg/L	<1	<1
Tetrachloroethene	µg/L	<1	<1
1,1,1,2-tetrachloroethane	µg/L	<1	<1
Chlorobenzene	µg/L	<1	<1
Ethylbenzene	µg/L	<1	<1
Bromoform	µg/L	<1	<1
m+p-xylene	µg/L	<2	<2
Styrene	µg/L	<1	<1
1,1,2,2-tetrachloroethane	µg/L	<1	<1
o-xylene	µg/L	<1	<1

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-25 GW101 7/04/2011 Water	54136-26 GW106 7/04/2011 Water
1,2,3-trichloropropane	µg/L	<1	<1
Isopropylbenzene	µg/L	<1	<1
Bromobenzene	µg/L	<1	<1
n-propyl benzene	µg/L	<1	<1
2-chlorotoluene	µg/L	<1	<1
4-chlorotoluene	µg/L	<1	<1
1,3,5-trimethyl benzene	µg/L	<1	<1
Tert-butyl benzene	µg/L	<1	<1
1,2,4-trimethyl benzene	µg/L	<1	<1
1,3-dichlorobenzene	µg/L	<1	<1
Sec-butyl benzene	µg/L	<1	<1
1,4-dichlorobenzene	µg/L	<1	<1
4-isopropyl toluene	µg/L	<1	<1
1,2-dichlorobenzene	µg/L	<1	<1
n-butyl benzene	µg/L	<1	<1
1,2-dibromo-3-chloropropane	µg/L	<1	<1
1,2,4-trichlorobenzene	µg/L	<1	<1
Hexachlorobutadiene	µg/L	<1	<1
1,2,3-trichlorobenzene	µg/L	<1	<1
Surrogate Dibromofluoromethane	%	103	100
Surrogate toluene-d8	%	101	103
Surrogate 4-BFB	%	107	105

vTRH & BTEX in Water				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date extracted	-	13/04/2011	13/04/2011	13/04/2011
Date analysed	-	14/04/2011	14/04/2011	14/04/2011
TRH C_6 - C_9	µg/L	<10	27	<10
Benzene	µg/L	<1	<1	<1
Toluene	µg/L	<1	3	<1
Ethylbenzene	µg/L	<1	<1	<1
m+p-xylene	µg/L	<2	<2	<2
o-xylene	µg/L	<1	<1	<1
Surrogate Dibromofluoromethane	%	103	100	106
Surrogate toluene-d8	%	101	103	100
Surrogate 4-BFB	%	107	105	98

sTRH in Water (C10-C36)				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011
$TRHC_{10}$ - C_{14}	µg/L	<50	200	<50
$TRHC_{15}$ - C_{28}	µg/L	<100	<100	<100
$TRHC_{29}$ - C_{36}	µg/L	<100	<100	<100
Surrogate o-Terphenyl	%	81	98	89

PAHs in Water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-25 GW101 7/04/2011 Water	54136-26 GW106 7/04/2011 Water	54136-27 BD1/070411 7/04/2011 Water
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011	12/04/2011
Naphthalene	µg/L	<1	<1	<1
Acenaphthylene	µg/L	<1	<1	<1
Acenaphthene	µg/L	<1	<1	<1
Fluorene	µg/L	<1	<1	<1
Phenanthrene	µg/L	<1	<1	<1
Anthracene	µg/L	<1	<1	<1
Fluoranthene	µg/L	<1	<1	<1
Pyrene	µg/L	<1	<1	<1
Benzo(a)anthracene	µg/L	<1	<1	<1
Chrysene	µg/L	<1	<1	<1
Benzo(b+k)fluoranthene	µg/L	<2	<2	<2
Benzo(a)pyrene	µg/L	<1	<1	<1
Indeno(1,2,3-c,d)pyrene	µg/L	<1	<1	<1
Dibenzo(a,h)anthracene	µg/L	<1	<1	<1
Benzo(g,h,i)perylene	µg/L	<1	<1	<1
Surrogate p-Terphenyl-d_{14}	%	83	103	95

OCP in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	54136-25 GW101 7/04/2011 Water	54136-26 GW106 7/04/2011 Water	54136-27 BD1/070411 7/04/2011 Water
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011
HCB	µg/L	<0.2	<0.2	<0.2
alpha-BHC	µg/L	<0.2	<0.2	<0.2
gamma-BHC	µg/L	<0.2	<0.2	<0.2
beta-BHC	µg/L	<0.2	<0.2	<0.2
Heptachlor	µg/L	<0.2	<0.2	<0.2
delta-BHC	µg/L	<0.2	<0.2	<0.2
Aldrin	µg/L	<0.2	<0.2	<0.2
Heptachlor Epoxide	µg/L	<0.2	<0.2	<0.2
gamma-Chlordane	µg/L	<0.2	<0.2	<0.2
alpha-Chlordane	µg/L	<0.2	<0.2	<0.2
Endosulfan I	µg/L	<0.2	<0.2	<0.2
pp-DDE	µg/L	<0.2	<0.2	<0.2
Dieldrin	µg/L	<0.2	<0.2	<0.2
Endrin	µg/L	<0.2	<0.2	<0.2
pp-DDD	µg/L	<0.2	<0.2	<0.2
Endosulfan II	µg/L	<0.2	<0.2	<0.2
pp-DDT	µg/L	<0.2	<0.2	<0.2
Endrin Aldehyde	µg/L	<0.2	<0.2	<0.2
Endosulfan Sulphate	µg/L	<0.2	<0.2	<0.2
Methoxychlor	µg/L	<0.2	<0.2	<0.2
Surrogate TCLMX	%	85	104	98

OP Pesticides in water				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011
Diazinon	µg/L	<0.2	<0.2	<0.2
Dimethoate	µg/L	<0.2	<0.2	<0.2
Chlorpyriphos-methyl	µg/L	<0.2	<0.2	<0.2
Ronnel	µg/L	<0.2	<0.2	<0.2
Chlorpyriphos	µg/L	<0.2	<0.2	<0.2
Fenitrothion	µg/L	<0.2	<0.2	<0.2
Bromophos ethyl	µg/L	<0.2	<0.2	<0.2
Ethion	µg/L	<0.2	<0.2	<0.2
Surrogate TCLMX	%	85	104	98

PCBs in Water				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date extracted	-	12/04/2011	12/04/2011	12/04/2011
Date analysed	-	13/04/2011	13/04/2011	13/04/2011
Arochlor 1016	µg/L	<2	<2	<2
Arochlor 1221*	µg/L	<2	<2	<2
Arochlor 1232	µg/L	<2	<2	<2
Arochlor 1242	µg/L	<2	<2	<2
Arochlor 1248	µg/L	<2	<2	<2
Arochlor 1254	µg/L	<2	<2	<2
Arochlor 1260	µg/L	<2	<2	<2
Surrogate TCLMX	%	85	104	98

Total Phenolics in Water				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date extracted	-	13/4/2011	13/4/2011	13/4/2011
Date analysed	-	13/4/2011	13/4/2011	13/4/2011
Total Phenolics (as Phenol)	mg/L	<0.5	<0.05	<0.5

HM in water - dissolved				
Our Reference:	UNITS	54136-25	54136-26	54136-27
Your Reference	----------	GW101	GW106	BD1/070411
Date Sampled	----------	7/04/2011	7/04/2011	7/04/2011
Type of sample		Water	Water	Water
Date prepared	-	12/4/2011	12/4/2011	12/4/2011
Date analysed	-	13/4/2011	13/4/2011	13/4/2011
Arsenic-Dissolved	µg/L	1	<1	1
Cadmium-Dissolved	µg/L	0.2	0.5	0.2
Chromium-Dissolved	µg/L	<1	<1	<1
Copper-Dissolved	µg/L	<1	6	<1
Lead-Dissolved	µg/L	<1	2	<1
Mercury-Dissolved	µg/L	<0.4	<0.4	<0.4
Nickel-Dissolved	µg/L	2	4	<1
Zinc-Dissolved	µg/L	4	44	2

Miscellaneous Inorganics			
Our Reference:	UNITS	54136-25	54136-26
Your Reference	----------	GW101	GW106
Date Sampled	----------	7/04/2011	7/04/2011
Type of sample		Water	Water
Date prepared	-	12/04/2011	12/04/2011
Date analysed	-	12/04/2011	12/04/2011
Hardness	mgCaCO3 /L	230	120
Calcium - Dissolved	mg/L	43	24
Magnesium - Dissolved	mg/L	31	15

Method ID	Methodology Summary
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Inorg-030	Total Phenolics - determined colorimetrically following disitillation, based upon APHA 21st ED 5530 D.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-14	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			13/04/2011	54136-14	13/04/2011 || 13/04/2011	LCS-1	13/04/2011
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	70%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	87%
2,2-dichloropropane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	81%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	68%
1,1-dichloropropene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Benzene	mg/kg	0.5	Org-014	<0.5	54136-14	<0.5 || <0.5	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2-dichloropropane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	71%
bromodichloromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	87%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	54136-14	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	87%
1,2-dibromoethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	LCS-1	66%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	54136-14	<2 || <2	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
o-Xylene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
isopropylbenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	54136-14	<1 || <1	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	93	54136-14	90 || 80 || RPD: 12	LCS-1	99%
Surrogate aaa-Trifluorotoluene	%		Org-014	119	54136-14	106 || 114 || RPD: 7	LCS-1	115%
Surrogate Toluene-d_8	%		Org-014	98	54136-14	96 || 97 || RPD: 1	LCS-1	101%
Surrogate 4-Bromofluorobenzene	%		Org-014	93	54136-14	94 || 92 || RPD: 2	LCS-1	95%

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-2	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-2	12/04/2011
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	54136-1	<25 || <25	LCS-2	85%
Benzene	mg/kg	0.5	Org-016	<0.5	54136-1	<0.5 || <0.5	LCS-2	81%
Toluene	mg/kg	0.5	Org-016	<0.5	54136-1	<0.5 || <0.5	LCS-2	78%
Ethylbenzene	mg/kg	1	Org-016	<1	54136-1	<1 || <1	LCS-2	86%
m+p-xylene	mg/kg	2	Org-016	<2	54136-1	<2 || <2	LCS-2	90%
o-Xylene	mg/kg	1	Org-016	<1	54136-1	<1 || <1	LCS-2	90%
Surrogate aaa-Trifluorotoluene	%		Org-016	89	54136-1	84 || 85 || RPD: 1	LCS-2	87%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-2	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-2	12/04/2011
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	54136-1	<50 || <50	LCS-2	88%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	54136-1	<100 || <100	LCS-2	93%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	54136-1	<100 || <100	LCS-2	89%
Surrogate o-Terphenyl	%		Org-003	82	54136-1	87 || 89 || RPD: 2	LCS-2	88%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	LCS-1	105%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	LCS-1	107%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.2 || 0.2 || RPD: 0	LCS-1	117%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.5 || 0.5 || RPD: 0	LCS-1	120%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.5 || 0.5 || RPD: 0	LCS-1	114%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.2 || 0.2 || RPD: 0	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.2 || 0.2 || RPD: 0	LCS-1	108%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	54136-1	0.4 || 0.4 || RPD: 0	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	54136-1	0.24 || 0.23 || RPD: 4	LCS-1	106%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.2 || 0.1 || RPD: 67	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	54136-1	0.1 || 0.1 || RPD: 0	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	98	54136-1	87 || 90 || RPD: 3	LCS-1	101%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
HCB	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	107%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	108%
Heptachlor	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	104%
delta-BHC	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	100%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	112%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	111%
Dieldrin	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	111%
Endrin	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	102%
pp-DDD	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	118%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	LCS-1	108%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-005	96	54136-1	91 || 93 || RPD: 2	LCS-1	107%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Diazinon	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	LCS-1	102%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	LCS-1	90%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	54136-1	<0.1 || <0.1	LCS-1	87%
Surrogate TCLMX	%		Org-008	96	54136-1	91 || 93 || RPD: 2	LCS-1	63%
QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	LCS-1	102%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	54136-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	96	54136-1	91 || 93 || RPD: 2	LCS-1	67%
QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/04/2011	54136-1	13/04/2011 || 13/04/2011	LCS-1	13/04/2011
Date analysed	-			13/04/2011	54136-1	13/04/2011 || 13/04/2011	LCS-1	13/04/2011
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	54136-1	<5 || <5	LCS-1	80%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date digested	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-1	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	54136-1	8 || 8 || RPD: 0	LCS-1	107%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	54136-1	<0.5 || <0.5	LCS-1	108%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	54136-1	17 || 17 || RPD: 0	LCS-1	105%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	54136-1	25 || 23 || RPD: 8	LCS-1	104%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	54136-1	64 || 59 || RPD: 8	LCS-1	103%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	54136-1	0.4 || 0.3 || RPD: 29	LCS-1	118%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	54136-1	12 || 12 || RPD: 0	LCS-1	106%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	54136-1	120 || 110 || RPD: 9	LCS-1	106%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			12/04/2011
Date analysed	-			13/04/2011
Moisture	%	0.1	Inorg-008	<0.1

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/04/2011	[NT]	[NT]	LCS-W1	13/04/2011
Date analysed	-			14/04/2011	[NT]	[NT]	LCS-W1	14/04/2011
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	106%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	124%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	101%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	98%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	103%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	93	[NT]	[NT]	LCS-W1	101%
Surrogate toluene-d8	%		Org-013	98	[NT]	[NT]	LCS-W1	104%
Surrogate 4-BFB	%		Org-013	93	[NT]	[NT]	LCS-W1	100%
QUALITY CONTROL vTRH & BTEX in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/04/2011	[NT]	[NT]	LCS-W1	13/04/2011
Date analysed	-			14/04/2011	[NT]	[NT]	LCS-W1	14/04/2011
$TRHC_6$ - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	107%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	104%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	109%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	108%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	107%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	109%
Surrogate Dibromofluoromethane	%		Org-016	103	[NT]	[NT]	LCS-W1	106%
Surrogate toluene-d8	%		Org-016	92	[NT]	[NT]	LCS-W1	101%
Surrogate 4-BFB	%		Org-016	100	[NT]	[NT]	LCS-W1	99%
QUALITY CONTROL sTRH in Water (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	[NT]	[NT]	LCS-W2	12/04/2011
Date analysed	-			12/04/2011	[NT]	[NT]	LCS-W2	12/04/2011
$TRHC_{10}$ - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	69%
$TRHC_{15}$ - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	123%
$TRHC_{29}$ - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	88%
Surrogate o-Terphenyl	%		Org-003	85	[NT]	[NT]	LCS-W2	92%
QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	[NT]	[NT]	LCS-W1	12/04/2011
Date analysed	-			12/04/2011	[NT]	[NT]	LCS-W1	12/04/2011
Naphthalene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	82%
Acenaphthylene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL PAHs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Fluorene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	89%
Phenanthrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	91%
Anthracene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	90%
Pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	90%
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-W1	93%
Benzo(b+k)fluoranthene	µg/L	2	Org-012 subset	<2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	1	Org-012 subset	<1	[NT]	[NT]	LCS-W1	86%
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]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	89	[NT]	[NT]	LCS-W1	99%
QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	[NT]	[NT]	LCS-1	12/04/2011
Date analysed	-			13/04/2011	[NT]	[NT]	LCS-1	13/04/2011
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	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-1	102%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	99%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	100%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	105%
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-1	103%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	106%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	94%

QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-1	112%
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-1	100%
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-005	92	[NT]	[NT]	LCS-1	101%
QUALITY CONTROL OP Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	[NT]	[NT]	LCS-1	12/04/2011
Date analysed	-			13/04/2011	[NT]	[NT]	LCS-1	13/04/2011
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]
Chlorpyriphos-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]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-1	106%
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-1	98%
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-1	92%
Surrogate TCLMX	%		Org-008	92	[NT]	[NT]	LCS-1	101%
QUALITY CONTROL PCBs in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			12/04/2011	[NT]	[NT]	LCS-1	12/04/2011
Date analysed	-			13/04/2011	[NT]	[NT]	LCS-1	13/04/2011
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-1	96%
Arochlor 1260	µg/L	2	Org-006	<2	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%		Org-006	92	[NT]	[NT]	LCS-1	107%

QUALITY CONTROL Total Phenolics in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/04/2011	[NT]	[NT]	LCS-W1	13/04/2011
Date analysed	-			13/04/2011	[NT]	[NT]	LCS-W1	13/04/2011
Total Phenolics (as Phenol)	mg/L	0.05	Inorg-030	<0.05	[NT]	[NT]	LCS-W1	80%
QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			12/4/2011	[NT]	[NT]	LCS-W1	12/4/2011
Date analysed	-			13/4/2011	[NT]	[NT]	LCS-W1	13/4/2011
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	89%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	[NT]	[NT]	LCS-W1	89%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	87%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	86%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	95%
Mercury-Dissolved	µg/L	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-W1	108%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	85%
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	91%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			12/04/2011	54136-25	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Date analysed	-			12/04/2011	54136-25	12/04/2011 || 12/04/2011	LCS-1	12/04/2011
Hardness	mgCaCO3/L	3		3.0	54136-25	230 || 230 || RPD: 0	[NR]	[NR]
Calcium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	54136-25	43 || 42 || RPD: 2	LCS-1	89%
Magnesium - Dissolved	mg/L	0.5	Metals-020 ICP-AES	<0.5	54136-25	31 || 31 || RPD: 0	LCS-1	86%

QUALITY CONTROL VOCs in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	54136-3	12/04/2011
Date analysed	-	[NT]	[NT]	54136-3	13/04/2011
Dichlorodifluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Bromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Chloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	mg/kg	[NT]	[NT]	54136-3	65%
cis-1,2-dichloroethene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromochloromethane	mg/kg	[NT]	[NT]	[NR]	[NR]
chloroform	mg/kg	[NT]	[NT]	54136-3	77%
2,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	mg/kg	[NT]	[NT]	54136-3	73%
1,1,1-trichloroethane	mg/kg	[NT]	[NT]	54136-3	60%
1,1-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
Cyclohexane	mg/kg	[NT]	[NT]	[NR]	[NR]
carbon tetrachloride	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromomethane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
trichloroethene	mg/kg	[NT]	[NT]	54136-3	63%
bromodichloromethane	mg/kg	[NT]	[NT]	54136-3	76%
trans-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
Toluene	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
1,3-dichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
dibromochloromethane	mg/kg	[NT]	[NT]	54136-3	83%
1,2-dibromoethane	mg/kg	[NT]	[NT]	[NR]	[NR]
tetrachloroethene	mg/kg	[NT]	[NT]	54136-3	66%
1,1,1,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
chlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromoform	mg/kg	[NT]	[NT]	[NR]	[NR]
m+p-xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
styrene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	[NT]	[NT]	[NR]	[NR]
o-Xylene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
isopropylbenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
bromobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
tert-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
sec-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
hexachlorobutadiene	mg/kg	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluorometha	%	[NT]	[NT]	54136-3	95%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	54136-3	123%
Surrogate Toluene-d_8	%	[NT]	[NT]	54136-3	110%
Surrogate 4-Bromofluorobenzene	%	[NT]	[NT]	54136-3	95%

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	54136-4	12/04/2011
Date analysed	-	[NT]	[NT]	54136-4	12/04/2011
vTRH C_6 - C_9	mg/kg	[NT]	[NT]	54136-4	84%
Benzene	mg/kg	[NT]	[NT]	54136-4	81%
Toluene	mg/kg	[NT]	[NT]	54136-4	76%
Ethylbenzene	mg/kg	[NT]	[NT]	54136-4	84%
m+p-xylene	mg/kg	[NT]	[NT]	54136-4	89%
o-Xylene	mg/kg	[NT]	[NT]	54136-4	87%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	54136-4	89%
QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	54136-4	12/04/2011
Date analysed	-	[NT]	[NT]	54136-4	12/04/2011
TRH C_{10} - C_{14}	mg/kg	[NT]	[NT]	54136-4	89%
TRH C_{15} - C_{28}	mg/kg	[NT]	[NT]	54136-4	94%
TRH C_{29} - C_{36}	mg/kg	[NT]	[NT]	54136-4	90%
Surrogate o-Terphenyl	%	[NT]	[NT]	54136-4	87%
QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	54136-14	12/04/2011 || 12/04/2011	54136-4	12/04/2011
Date analysed	-	54136-14	12/04/2011 || 12/04/2011	54136-4	12/04/2011
Naphthalene	mg/kg	54136-14	<0.1 || <0.1	54136-4	104%
Acenaphthylene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	54136-14	<0.1 || <0.1	54136-4	96%
Phenanthrene	mg/kg	54136-14	<0.1 || <0.1	54136-4	103%
Anthracene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	54136-14	<0.1 || <0.1	54136-4	105%
Pyrene	mg/kg	54136-14	<0.1 || <0.1	54136-4	99%
Benzo(a)anthracene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	54136-14	<0.1 || <0.1	54136-4	96%
Benzo(b+k)fluoranthene	mg/kg	54136-14	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	54136-14	<0.05 || <0.05	54136-4	96%
Indeno(1,2,3-c,d)pyrene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	54136-14	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	54136-14	90 || 91 || RPD: 1	54136-4	87%

QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	54136-4	13/04/2011
Date analysed	-	[NT]	[NT]	54136-4	13/04/2011
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	54136-4	75%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	54136-14	12/04/2011 || 12/04/2011	54136-4	12/04/2011
Date analysed	-	54136-14	12/04/2011 || 12/04/2011	54136-4	12/04/2011
Arsenic	mg/kg	54136-14	6 || 6 || RPD: 0	54136-4	100%
Cadmium	mg/kg	54136-14	<0.5 || <0.5	54136-4	101%
Chromium	mg/kg	54136-14	33 || 32 || RPD: 3	54136-4	102%
Copper	mg/kg	54136-14	17 || 17 || RPD: 0	54136-4	103%
Lead	mg/kg	54136-14	14 || 14 || RPD: 0	54136-4	93%
Mercury	mg/kg	54136-14	<0.1 || <0.1	54136-4	122%
Nickel	mg/kg	54136-14	22 || 22 || RPD: 0	54136-4	99%
Zinc	mg/kg	54136-14	44 || 44 || RPD: 0	54136-4	91%
QUALITY CONTROL HM in water - dissolved	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	54136-26	12/4/2011
Date analysed	-	[NT]	[NT]	54136-26	13/4/2011
Arsenic-Dissolved	µg/L	[NT]	[NT]	54136-26	91%
Cadmium-Dissolved	µg/L	[NT]	[NT]	54136-26	87%
Chromium-Dissolved	µg/L	[NT]	[NT]	54136-26	86%
Copper-Dissolved	µg/L	[NT]	[NT]	54136-26	80%
Lead-Dissolved	µg/L	[NT]	[NT]	54136-26	88%
Mercury-Dissolved	µg/L	[NT]	[NT]	54136-26	80%
Nickel-Dissolved	µg/L	[NT]	[NT]	54136-26	81%
Zinc-Dissolved	µg/L	[NT]	[NT]	54136-26	80%
QUALITY CONTROL Miscellaneous Inorganics	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date prepared	-	[NT]	[NT]	54136-26	12/04/2011
Date analysed	-	[NT]	[NT]	54136-26	12/04/2011
Hardness	mgCaCO3/L	[NT]	[NT]	[NR]	[NR]
Calcium - Dissolved	mg/L	[NT]	[NT]	54136-26	87%
Magnesium - Dissolved	mg/L	[NT]	[NT]	54136-26	94%

Report Comments:
Total Phenolics:PQL raised due to sample matrix.

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 batched of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: Wagga Wagga .....
Project No: 72320.01..... Sampler: Peter Hartcliff..... .....
Project Mgr: Paul Gorman..... Phone: 02 9809 0666 .....
Email: rene.alviar@douglaspartners.com.au .....
Date Required: Normal TAT ..... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water A - Air	Container type	Analytes: Combination 8	Combination 3	8 Heavy Metals	PAH	VOC		Others	Notes
BH101/0.1-0.2	0.1-0.2	1	30.3	S	J	X							
BH101/0.5-0.6	0.5-0.6	2	30.3	S	J								
BH101/2-2.2	2-2.2	3	30.3	S	J		X			X			
BH102/0.4-0.5	0.4-0.5	4	29.03	S	J	X							
BH102/2-2.2	2-2.2	5	29.03	S	J		X						
BH103/0.5-0.6	0.5-0.6	6	30.03	S	J	X							
BH103/2-2.2	2-2.2	7	30.03	S	J								
BH104/0.3-0.4	0.3-0.4	8	31.03	S	J	X							
BH104/1.6-1.7	1.6-1.7	9	31.03	S	J								
BH105/0.2-0.3	0.2-0.3	10	31.03	S	J	X							
BH105/0.8-0.9	0.8-0.9	11	31.03	S	J			X	X				
BH105/2-2.2	2-2.2	12	31.03	S	J								

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

Job No: 54136
Date received: 11/4/11
Time received: 5pm
Received by: Z-L
Temp: Cool/Ambient
Cooling: Icepack
Security: Intact/Broken/None

Lab Report No. .....
Phone: (02) 9809 0666
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Fax: (02) 9809 4095

Relinquished by: RA	Signed:	Date & Time: 11.04.11	Received By: Z-L.	Date & Time: 11/4/11 5pm
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Douglas Partners
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CHAIN OF CUSTODY

Project Name: Wagga Wagga .....
Project No: 72320.01..... Sampler: Peter Hartcliff.....
Project Mgr: Paul Gorman..... Phone: 02 9809 0666 .....
Email: rene.alviar@douglaspartners.com.au .....
Date Required: Normal TAT ..... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type: S - soil W – water A - Air	Container type	Analytes: Combination 8	Combination 3	8 Heavy Metals	PAH	VOC		Others	Notes
BH106/0.1-0.2	0.1-0.2	13	05.04	S	J	X							
BH106/1.75-2.0	1.75-2.0	14	05.04	S	J			X	X	X			
BH107/1.9-2.0	1.9-2.0	15	07.04	S	J	X							
BH107/2.2-2.4	2.2-2.4	16	07.04	S	J			X	X				
BH107A/0.4-0.5	0.4-0.5	17	07.04	S	J								
BH107A/1.5-1.6	1.5-1.6	18	07.04	S	J			X	X				
BH108/0.1-0.2	0.1-0.2	19	06.04	S	J	X							
BH108/2-2.2	2-2.2	20	06.04	S	J			X	X				
BH109/0.1-0.3	0.1-0.3	21	05.04	S	J	X							
BH109/1.4-1.6	1.4-1.6	22	05.04	S	J								
BD1/290311	-	23	29.03	S	J								
BD2/050411	-	24	05.04	S	J								

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: 9910 6200
Job No: 54136
Date received:
Time received:
Received by:
Temp: Cool/Ambient
Cooling: Ice/icepack
Security: Intact/Broken/None

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: Signed: Date & Time: 11.04.11 Received By: Date & Time: 11/4/11 5pm
Relinquished by: Signed: Date & Time: Received By: Date & Time:

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project No: 72320.01..... Sampler: Peter Hartcliff..... .....
Project Mgr: Paul Gorman..... Phone: 02 9809 0666 .....
Email: rene.alviar@douglaspartners.com.au .....
Date Required: Normal TAT ..... Lab Quote No. .....

12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth (m)	Lab ID	Sampling Date	Sample Type S - soil W – water A - Air	Container type	Analytes							Notes
						Combination 8	Hardness	VOC				Others	
GW101	-	25	07.04	W	G,V,P	X	X	X					
GW106	-	26	07.04	W	G,V,P	X	X	X					
BD1/070411	-	27	07.04	W	G,V,P	X							

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time: 11.04.11	Received By:	Date & Time: 11/4/11 6pm	
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:	

Envirolab Services Pty Ltd
ABN 37 112 535 645
12 Ashley St Chatswood NSW 2067
ph 02 9910 6200 fax 02 9910 6201
enquiries@envirolabservices.com.au
www.envirolabservices.com.au

CERTIFICATE OF ANALYSIS 62247

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Peter Hartcliff

Sample log in details:

Your Reference:	**72320.03, Wagga Wagga Base Hospital**		
No. of samples:	13 Soils		
Date samples received / completed instructions received	22/09/11	/	22/09/11

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

Report Details:

Date results requested by: / Issue Date:	29/09/11	/	29/09/11
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:

Nancy Zhang
Chemist

Rhian Morgan
Reporting Supervisor

Tania Notaras
Manager

Paul Ching
Approved Signatory

NATA
ACCREDITED FOR TECHNICAL COMPETENCE

vTRH & BTEX in Soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/9/11	23/9/11	23/9/11	23/9/11	23/9/11
Date analysed	-	25/9/11	25/9/11	25/9/11	25/9/11	25/9/11
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	120	115	124	122	111

vTRH & BTEX in Soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/9/11	23/9/11	23/9/11	23/9/11	23/9/11
Date analysed	-	25/9/11	25/9/11	25/9/11	25/9/11	25/9/11
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	117	118	118	117	122

vTRH & BTEX in Soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/9/11	23/9/11	23/9/11
Date analysed	-	25/9/11	25/9/11	25/9/11
vTRH C_6 - C_9	mg/kg	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	124	133	130

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
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
Surrogate o-Terphenyl	%	92	93	91	92	92

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
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
Surrogate o-Terphenyl	%	93	94	96	93	93

sTRH in Soil (C10-C36)				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011
TRHC$_{10}$ - C$_{14}$	mg/kg	<50	<50	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100	<100	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100	<100	<100
Surrogate o-Terphenyl	%	93	92	83

PAHs in Soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.4	0.3	0.1	0.1
Pyrene	mg/kg	<0.1	0.4	0.4	0.1	0.2
Benzo(a)anthracene	mg/kg	<0.1	0.2	0.2	<0.1	<0.1
Chrysene	mg/kg	<0.1	0.2	0.2	<0.1	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	0.3	0.3	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.19	0.17	0.05	0.08
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	0.1	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	0.1	<0.1	<0.1
Surrogate p-Terphenyl-d14	%	97	97	97	96	95

PAHs in Soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	0.3	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	4.6	<0.1	1.3	0.1
Anthracene	mg/kg	<0.1	0.7	<0.1	0.3	<0.1
Fluoranthene	mg/kg	<0.1	6.9	<0.1	1.7	0.2
Pyrene	mg/kg	<0.1	6.0	<0.1	1.8	0.2
Benzo(a)anthracene	mg/kg	<0.1	2.3	<0.1	0.9	<0.1
Chrysene	mg/kg	<0.1	2.6	<0.1	0.9	0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	4.5	<0.2	1.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	2.4	<0.05	0.75	0.1
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	2.1	<0.1	0.3	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	0.4	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	1.9	<0.1	0.3	<0.1
Surrogate p-Terphenyl-d14	%	100	92	103	95	96

PAHs in Soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011
Naphthalene	mg/kg	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	0.2	<0.1
Anthracene	mg/kg	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	<0.1	0.3	<0.1
Pyrene	mg/kg	<0.1	0.4	<0.1
Benzo(a)anthracene	mg/kg	<0.1	0.2	<0.1
Chrysene	mg/kg	<0.1	0.2	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	0.3	<0.2
Benzo(a)pyrene	mg/kg	<0.05	0.17	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	100	97	98

Organochlorine Pesticides in soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	93	89	90	89	86

Organochlorine Pesticides in soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
HCB	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	91	97	89	92

Organochlorine Pesticides in soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011
HCB	mg/kg	<0.1	<0.1	<0.1
alpha-BHC	mg/kg	<0.1	<0.1	<0.1
gamma-BHC	mg/kg	<0.1	<0.1	<0.1
beta-BHC	mg/kg	<0.1	<0.1	<0.1
Heptachlor	mg/kg	<0.1	<0.1	<0.1
delta-BHC	mg/kg	<0.1	<0.1	<0.1
Aldrin	mg/kg	<0.1	<0.1	<0.1
Heptachlor Epoxide	mg/kg	<0.1	<0.1	<0.1
gamma-Chlordane	mg/kg	<0.1	<0.1	<0.1
alpha-chlordane	mg/kg	<0.1	<0.1	<0.1
Endosulfan I	mg/kg	<0.1	<0.1	<0.1
pp-DDE	mg/kg	<0.1	<0.1	<0.1
Dieldrin	mg/kg	<0.1	<0.1	<0.1
Endrin	mg/kg	<0.1	<0.1	<0.1
pp-DDD	mg/kg	<0.1	<0.1	<0.1
Endosulfan II	mg/kg	<0.1	<0.1	<0.1
pp-DDT	mg/kg	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	<0.1	<0.1	<0.1
Endosulfan Sulphate	mg/kg	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	94	91	91

Organophosphorus Pesticides						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	93	89	90	89	86

Organophosphorus Pesticides						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	91	97	89	92

Organophosphorus Pesticides				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011
Diazinon	mg/kg	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	94	91	91

PCBs in Soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	93	89	90	89	86

PCBs in Soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011	26/09/2011	26/09/2011
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCLMX	%	91	91	97	89	92

PCBs in Soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	26/09/2011	26/09/2011	26/09/2011
Arochlor 1016	mg/kg	<0.1	<0.1	<0.1
Arochlor 1221*	mg/kg	<0.1	<0.1	<0.1
Arochlor 1232	mg/kg	<0.1	<0.1	<0.1
Arochlor 1242	mg/kg	<0.1	<0.1	<0.1
Arochlor 1248	mg/kg	<0.1	<0.1	<0.1
Arochlor 1254	mg/kg	<0.1	<0.1	<0.1
Arochlor 1260	mg/kg	<0.1	<0.1	<0.1
Surrogate TCLMX	%	94	91	91

Total Phenolics in Soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Date analysed	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Date analysed	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	27/09/2011	27/09/2011	27/09/2011
Date analysed	-	27/09/2011	27/09/2011	27/09/2011
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5

Acid Extractable metals in soil						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Arsenic	mg/kg	6	6	5	9	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	18	25	25	28	27
Lead	mg/kg	10	46	37	37	89
Mercury	mg/kg	<0.1	0.4	0.1	<0.1	0.6
Nickel	mg/kg	11	13	13	15	14

Acid Extractable metals in soil						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Arsenic	mg/kg	4	5	6	10	5
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	22	21	27	13	18
Lead	mg/kg	13	12	16	81	64
Mercury	mg/kg	<0.1	<0.1	<0.1	<0.1	0.1
Nickel	mg/kg	13	7	11	19	15

Acid Extractable metals in soil				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date digested	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	23/09/2011	23/09/2011	23/09/2011
Arsenic	mg/kg	<4	5	6
Cadmium	mg/kg	<0.5	<0.5	<0.5
Chromium	mg/kg	11	22	23
Lead	mg/kg	12	150	30
Mercury	mg/kg	<0.1	0.3	0.1
Nickel	mg/kg	6	11	12

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	62247-1 BH201/0.3-0.4 21/09/2011 Soil	62247-2 BH202/0.1-0.2 21/09/2011 Soil	62247-3 BH203/0.1-0.2 21/09/2011 Soil	62247-4 BH204/0.2-0.3 21/09/2011 Soil	62247-5 BH205/0.3-0.4 20/09/2011 Soil
Date prepared	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	24/09/2011	24/09/2011	24/09/2011	24/09/2011	24/09/2011
Moisture	%	17	11	9.3	11	16

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	62247-6 BH206/0.15-0.25 20/09/2011 Soil	62247-7 BH207/0.05-0.1 20/09/2011 Soil	62247-8 BH208/0.1-0.2 20/09/2011 Soil	62247-9 BH209/0.1-0.2 21/09/2011 Soil	62247-10 BH210/0.1-0.2 21/09/2011 Soil
Date prepared	-	23/09/2011	23/09/2011	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	24/09/2011	24/09/2011	24/09/2011	24/09/2011	24/09/2011
Moisture	%	11	6.9	10	5.0	10

Moisture Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	62247-11 BH211/0.3-0.4 21/09/2011 Soil	62247-12 BD1/21.9.11 21/09/2011 Soil	62247-13 BH211/0.6-0.7 21/09/2011 Soil
Date prepared	-	23/09/2011	23/09/2011	23/09/2011
Date analysed	-	24/09/2011	24/09/2011	24/09/2011
Moisture	%	10	12	14

Asbestos ID - soils						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	27/09/2011	27/09/2011	27/09/2011	27/09/2011	27/09/2011
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Asbestos ID - soils				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date analysed	-	27/09/2011	27/09/2011	27/09/2011
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil	Brown fine-grained soil	Brown fine-grained soil
Asbestos ID in soil	-	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg	No asbestos found at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected	No respirable fibres detected	No respirable fibres detected

Metals in TCLP USEPA1311						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	29/09/2011	29/09/2011	29/09/2011	29/09/2011	29/09/2011
pH of soil for fluid# determ.	pH units	6.6	6.3	6.8	6.5	8.0
pH of soil for fluid # determ. (acid)	pH units	1.7	1.8	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	5.0	5.0	5.0	5.0	5.0
Lead in TCLP	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

Metals in TCLP USEPA1311						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	29/09/2011	29/09/2011	29/09/2011	29/09/2011	29/09/2011
pH of soil for fluid# determ.	pH units	7.7	7.1	7.3	7.4	8.2
pH of soil for fluid # determ. (acid)	pH units	1.7	1.7	1.7	1.7	1.7
Extraction fluid used	-	1	1	1	1	1
pH of final Leachate	pH units	4.9	4.9	5.0	5.0	5.0
Lead in TCLP	mg/L	<0.03	<0.03	<0.03	<0.03	<0.03

Metals in TCLP USEPA1311				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	29/09/2011	29/09/2011	29/09/2011
pH of soil for fluid# determ.	pH units	8.2	6.9	8.2
pH of soil for fluid # determ. (acid)	pH units	1.7	1.6	1.7
Extraction fluid used	-	1	1	1
pH of final Leachate	pH units	5.0	4.9	5.0
Lead in TCLP	mg/L	<0.03	<0.03	<0.03

PAHs in TCLP (USEPA 1311)						
Our Reference:	UNITS	62247-1	62247-2	62247-3	62247-4	62247-5
Your Reference	----------	BH201/0.3-0.4	BH202/0.1-0.2	BH203/0.1-0.2	BH204/0.2-0.3	BH205/0.3-0.4
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011	21/09/2011	20/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Surrogate p-Terphenyl-d_{14}	%	107	89	102	108	111

PAHs in TCLP (USEPA 1311)						
Our Reference:	UNITS	62247-6	62247-7	62247-8	62247-9	62247-10
Your Reference	----------	BH206/0.15-0.25	BH207/0.05-0.1	BH208/0.1-0.2	BH209/0.1-0.2	BH210/0.1-0.2
Date Sampled	----------	20/09/2011	20/09/2011	20/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	28/09/2011	28/09/2011	28/09/2011	28/09/2011	28/09/2011
Naphthalene in TCLP	mg/L	<0.001	<0.001	0.006	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	0.006	0.003	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	0.004	0.006	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	0.027	0.005	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	0.002	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	0.009	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	0.006	0.002	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001	<0.001	<0.001
Surrogate p-Terphenyl-d_{14}	%	110	101	112	111	99

PAHs in TCLP (USEPA 1311)				
Our Reference:	UNITS	62247-11	62247-12	62247-13
Your Reference	----------	BH211/0.3-0.4	BD1/21.9.11	BH211/0.6-0.7
Date Sampled	----------	21/09/2011	21/09/2011	21/09/2011
Type of sample		Soil	Soil	Soil
Date extracted	-	28/09/2011	28/09/2011	28/09/2011
Date analysed	-	28/09/2011	28/09/2011	28/09/2011
Naphthalene in TCLP	mg/L	<0.001	<0.001	<0.001
Acenaphthylene in TCLP	mg/L	<0.001	<0.001	<0.001
Acenaphthene in TCLP	mg/L	<0.001	<0.001	<0.001
Fluorene in TCLP	mg/L	<0.001	<0.001	<0.001
Phenanthrene in TCLP	mg/L	<0.001	<0.001	<0.001
Anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Fluoranthene in TCLP	mg/L	<0.001	<0.001	<0.001
Pyrene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(a)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Chrysene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(b+k)fluoranthene in TCLP	mg/L	<0.002	<0.002	<0.002
Benzo(a)pyrene in TCLP	mg/L	<0.001	<0.001	<0.001
Indeno(1,2,3-c,d)pyrene - TCLP	mg/L	<0.001	<0.001	<0.001
Dibenzo(a,h)anthracene in TCLP	mg/L	<0.001	<0.001	<0.001
Benzo(g,h,i)perylene in TCLP	mg/L	<0.001	<0.001	<0.001
Surrogate p-Terphenyl-d_{14}	%	113	85	114

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.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Inorg-030	Total Phenolics - determined colorimetrically following disitillation, based upon APHA 21st ED 5530 D.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Inorg-008	Moisture content determined by heating at 105 deg C for a minimum of 4 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.
Inorg-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 21st 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	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/9/11	62247-1	23/9/11 || 23/9/11	LCS-1	23/9/11
Date analysed	-			25/9/11	62247-1	25/9/11 || 25/9/11	LCS-1	25/6/11
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	62247-1	<25 || <25	LCS-1	109%
Benzene	mg/kg	0.2	Org-016	<0.2	62247-1	<0.2 || <0.2	LCS-1	99%
Toluene	mg/kg	0.5	Org-016	<0.5	62247-1	<0.5 || <0.5	LCS-1	111%
Ethylbenzene	mg/kg	1	Org-016	<1	62247-1	<1 || <1	LCS-1	112%
m+p-xylene	mg/kg	2	Org-016	<2	62247-1	<2 || <2	LCS-1	111%
o-Xylene	mg/kg	1	Org-016	<1	62247-1	<1 || <1	LCS-1	117%
Surrogate aaa-Trifluorotoluene	%		Org-016	119	62247-1	120 || 119 || RPD: 1	LCS-1	119%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-12	23/09/2011
Date analysed	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-12	23/09/2011
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	62247-1	<50 || <50	LCS-12	106%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	62247-1	<100 || <100	LCS-12	101%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	62247-1	<100 || <100	LCS-12	95%
Surrogate o-Terphenyl	%		Org-003	94	62247-1	92 || 96 || RPD: 4	LCS-12	98%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-12	23/09/2011
Date analysed	-			26/09/2011	62247-1	26/09/2011 || 26/09/2011	LCS-12	26/09/2011
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	100%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	107%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	110%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	106%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	112%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	LCS-12	114%
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	62247-1	<0.2 || <0.2	[NR]	[NR]

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	62247-1	<0.05 || <0.05	LCS-12	109%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	100	62247-1	97 || 103 || RPD: 6	LCS-12	99%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-12	23/09/2011
Date analysed	-			26/09/2011	62247-1	26/09/2011 || 26/09/2011	LCS-12	26/09/2011
HCB	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	94%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	94%
Heptachlor	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	92%
delta-BHC	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	88%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	94%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	89%
Dieldrin	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	93%
Endrin	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	92%
pp-DDD	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	109%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	LCS-12	92%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-005	89	62247-1	93 || 89 || RPD: 4	LCS-12	92%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-2	23/09/2011
Date analysed	-			26/09/2011	62247-1	26/09/2011 || 26/09/2011	LCS-2	26/09/2011
Diazinon	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	LCS-2	105%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	LCS-2	104%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	62247-1	<0.1 || <0.1	LCS-2	102%
Surrogate TCLMX	%		Org-008	89	62247-1	93 || 89 || RPD: 4	LCS-2	90%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-2	23/09/2011
Date analysed	-			26/09/2011	62247-1	26/09/2011 || 26/09/2011	LCS-2	26/09/2011
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	LCS-2	138%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	62247-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	89	62247-1	93 || 89 || RPD: 4	LCS-2	100%

QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			27/09/2011	62247-2	27/09/2011 || 27/09/2011	LCS-1	27/09/2011
Date analysed	-			27/09/2011	62247-2	27/09/2011 || 27/09/2011	LCS-1	27/09/201
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	62247-2	<5 || <5	LCS-1	113%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date digested	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-1	23/09/2011
Date analysed	-			23/09/2011	62247-1	23/09/2011 || 23/09/2011	LCS-1	23/09/2011
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	62247-1	6 || 6 || RPD: 0	LCS-1	103%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	62247-1	<0.5 || <0.5	LCS-1	105%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	62247-1	18 || 19 || RPD: 5	LCS-1	106%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	62247-1	10 || 13 || RPD: 26	LCS-1	103%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	62247-1	<0.1 || <0.1	LCS-1	107%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	62247-1	11 || 11 || RPD: 0	LCS-1	106%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			23/09/2011
Date analysed	-			24/09/2011
Moisture	%	0.1	Inorg-008	[NT]

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

QUALITY CONTROL Metals in TCLP USEPA1311	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD
Date extracted	-			29/09/2011	62247-7	28/09/2011 || 28/09/2011
Date analysed	-			29/09/2011	62247-7	29/09/2011 || 29/09/2011
Lead in TCLP	mg/L	0.03	Metals-020 ICP-AES	<0.03	62247-7	<0.03 || <0.03

QUALITY CONTROL PAHs in TCLP (USEPA 1311)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			28/09/2011	[NT]	[NT]	LCS-W3	28/09/2011
Date analysed	-			28/09/2011	[NT]	[NT]	LCS-W3	28/09/2011
Naphthalene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	83%
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	92%
Phenanthrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	87%
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	85%

QUALITY CONTROL PAHs in TCLP (USEPA 1311)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene in TCLP	mg/L	0.001	Org-012 subset	<0.001	[NT]	[NT]	LCS-W3	90%
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	90%
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	97%
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-d_{14}	%		Org-012	99	[NT]	[NT]	LCS-W3	100%

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/9/11 || 23/9/11	62247-2	23/9/11
Date analysed	-	62247-11	25/9/11 || 25/9/11	62247-2	25/9/11
vTRH C_6 - C_9	mg/kg	62247-11	<25 || <25	62247-2	107%
Benzene	mg/kg	62247-11	<0.2 || <0.2	62247-2	95%
Toluene	mg/kg	62247-11	<0.5 || <0.5	62247-2	108%
Ethylbenzene	mg/kg	62247-11	<1 || <1	62247-2	110%
m+p-xylene	mg/kg	62247-11	<2 || <2	62247-2	110%
o-Xylene	mg/kg	62247-11	<1 || <1	62247-2	114%
Surrogate aaa-Trifluorotoluene	%	62247-11	124 || 119 || RPD: 4	62247-2	114%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
TRH C_{10} - C_{14}	mg/kg	62247-11	<50 || <50	62247-2	91%
TRH C_{15} - C_{28}	mg/kg	62247-11	<100 || <100	62247-2	87%
TRH C_{29} - C_{36}	mg/kg	62247-11	<100 || <100	62247-2	81%
Surrogate o-Terphenyl	%	62247-11	93 || 94 || RPD: 1	62247-2	84%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	26/09/2011 || 26/09/2011	62247-2	26/09/2011
Naphthalene	mg/kg	62247-11	<0.1 || <0.1	62247-2	90%
Acenaphthylene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	62247-11	<0.1 || <0.1	62247-2	94%
Phenanthrene	mg/kg	62247-11	<0.1 || <0.1	62247-2	94%
Anthracene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	62247-11	<0.1 || <0.1	62247-2	94%
Pyrene	mg/kg	62247-11	<0.1 || <0.1	62247-2	99%
Benzo(a)anthracene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	62247-11	<0.1 || <0.1	62247-2	96%
Benzo(b+k)fluoranthene	mg/kg	62247-11	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	62247-11	<0.05 || <0.05	62247-2	98%
Indeno(1,2,3-c,d)pyrene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	62247-11	100 || 99 || RPD: 1	62247-2	86%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	26/09/2011 || 26/09/2011	62247-2	26/09/2011
HCB	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	62247-11	<0.1 || <0.1	62247-2	85%
gamma-BHC	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	62247-11	<0.1 || <0.1	62247-2	85%
Heptachlor	mg/kg	62247-11	<0.1 || <0.1	62247-2	82%
delta-BHC	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	62247-11	<0.1 || <0.1	62247-2	79%
Heptachlor Epoxide	mg/kg	62247-11	<0.1 || <0.1	62247-2	84%
gamma-Chlordane	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	62247-11	<0.1 || <0.1	62247-2	79%
Dieldrin	mg/kg	62247-11	<0.1 || <0.1	62247-2	83%
Endrin	mg/kg	62247-11	<0.1 || <0.1	62247-2	83%
pp-DDD	mg/kg	62247-11	<0.1 || <0.1	62247-2	97%
Endosulfan II	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endosulfan Sulphate	mg/kg	62247-11	<0.1 || <0.1	62247-2	82%
Methoxychlor	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	62247-11	94 || 90 || RPD: 4	62247-2	82%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	26/09/2011 || 26/09/2011	62247-2	26/09/2011
Diazinon	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	62247-11	<0.1 || <0.1	62247-2	114%
Fenitrothion	mg/kg	62247-11	<0.1 || <0.1	62247-2	110%
Bromophos-ethyl	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	62247-11	<0.1 || <0.1	62247-2	117%
Surrogate TCLMX	%	62247-11	94 || 90 || RPD: 4	62247-2	98%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	26/09/2011 || 26/09/2011	62247-2	26/09/2011
Arochlor 1016	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221*	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	62247-11	<0.1 || <0.1	62247-2	134%
Arochlor 1260	mg/kg	62247-11	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%	62247-11	94 || 90 || RPD: 4	62247-2	111%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	62247-12	27/09/2011 || 27/09/2011	62247-3	27/09/2011
Date analysed	-	62247-12	27/09/2011 || 27/09/2011	62247-3	27/09/2011
Total Phenolics (as Phenol)	mg/kg	62247-12	<5 || <5	62247-3	98%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Date analysed	-	62247-11	23/09/2011 || 23/09/2011	62247-2	23/09/2011
Arsenic	mg/kg	62247-11	<4 || 4	62247-2	104%
Cadmium	mg/kg	62247-11	<0.5 || <0.5	62247-2	100%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Chromium	mg/kg	62247-11	11 || 13 || RPD: 17	62247-2	105%
Lead	mg/kg	62247-11	12 || 13 || RPD: 8	62247-2	91%
Mercury	mg/kg	62247-11	<0.1 || <0.1	62247-2	107%
Nickel	mg/kg	62247-11	6 || 7 || RPD: 15	62247-2	102%

Report Comments:

Asbestos: Sample 62247-12; A portion of the supplied sample was sub-sampled for asbestos according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 30-40g of sample in its own container.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Paul Ching

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

Quality Control Definitions

Blank: This is the component of the analytical signal which is not derived from the sample but from reagents, glassware etc, can be determined by processing solvents and reagents in exactly the same manner as for samples.
Duplicate: This is the complete duplicate analysis of a sample from the process batch. If possible, the sample selected should be one where the analyte concentration is easily measurable.
Matrix Spike : A portion of the sample is spiked with a known concentration of target analyte. The purpose of the matrix spike is to monitor the performance of the analytical method used and to determine whether matrix interferences exist.
LCS (Laboratory Control Sample) : This comprises either a standard reference material or a control matrix (such as a blank sand or water) fortified with analytes representative of the analyte class. It is simply a check sample.
Surrogate Spike: Surrogates are known additions to each sample, blank, matrix spike and LCS in a batch, of compounds which are similar to the analyte of interest, however are not expected to be found in real samples.

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

Douglas Partners
Geotechnics · Environment · Groundwater

CHAIN OF CUSTODY

Project Name: WAGGA WAGGA BASE HOSPITAL REDEVELOPMENT
Project No: 72320.03 Sampler: .....
Project Mgr: Peter ~~Oitmaa~~ Hartcliff Mob. Phone: ~~0412 574 518~~ 0423 564 775
Email: peter.~~oitmaa~~hartcliff@douglaspartners.com.au
Date Required: ..... Lab Quote No. .....

To: Envirolab Services
12 Ashley Street, Chatswood NSW 2067
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W - water	Container type	Analytes: 8 Metals (As, Cd, Cr, ~~Cu~~, Pb, Hg, ~~Zn~~, Ni)	BTEX/ TPH	PAH	OCP/ OPP	PCB	Phenols	Asbestos	TCLP (Metals/ PAH) + Lead	Notes
BH201	0.3-0.4	1	21.9	S	Jar + Bag	✓	✓	✓	✓	✓	✓	✓	✓	
BH202	0.1-0.2	2	"	"	"	"	"	"	"	"	"	"	"	
BH 203	0.1-0.2	3	"	"	"	"	"	"	"	"	"	"	"	
BH 204	0.2-0.3	4	"	"	"	"	"	"	"	"	"	"	"	
BH 205	0.3-0.4	5	20.9	"	"	"	"	"	"	"	"	"	"	
BH 206	0.15-0.25	6	"	"	"	"	"	"	"	"	"	"	"	
BH 207	0.05-0.1	7	"	"	"	"	"	"	"	"	"	"	"	
BH 208	0.1-0.2	8	"	"	"	"	"	"	"	"	"	"	"	
BH 209	0.1-0.2	9	21.9	"	"	"	"	"	"	"	"	"	"	
BH 210	0.1-0.2	10	"	"	"	"	"	"	"	"	"	"	"	
BH 211	0.3-0.4	11	"	"	"	"	"	"	"	"	"	"	"	
~~BH1~~/21.9	"	12	"	"	~~Jar~~ Jar only	"	"	"	"	"	"	"	"	
BH211	0.6-0.7	13	21.9	"	"	"	"	"	"	"	"	"	"	

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

Job No: 62247
Date Received: 22/9/11
~~Time Received: 16:00~~
Received by: JHie
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken

Lab Report No. .....
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by: PGH	Signed: PGH	Date & Time: 22.9.11@2pm	Received By: JHie	Date & Time: 22/9/11
Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:

Envirolab Services Pty Ltd
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CERTIFICATE OF ANALYSIS 81724

Client:
Douglas Partners
96 Hermitage Rd
West Ryde
NSW 2114

Attention: Caitlyn Falla

Sample log in details:

Your Reference:	**72320.06, Wagga Hospital**
No. of samples:	7 Soils
Date samples received / completed instructions received	15/11/2012 / 15/11/2012

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:	22/11/12 / 22/11/12
Date of Preliminary Report:	Not issued

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Results Approved By:

Rhian Morgan
Reporting Supervisor

Nick Sarlamis
Inorganics Supervisor

Lulu Guo
Approved Signatory

Jeremy Faircloth
Chemist

vTRH & BTEX in Soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
vTRH C_6 - C_9	mg/kg	<25	<25	<25	<25	<25
Benzene	mg/kg	<0.2	<0.2	<0.2	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1	<1	<1	<1
m+p-xylene	mg/kg	<2	<2	<2	<2	<2
o-Xylene	mg/kg	<1	<1	<1	<1	<1
Surrogate aaa-Trifluorotoluene	%	91	98	102	100	99

vTRH & BTEX in Soil		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	16/11/2012
Date analysed	-	16/11/2012
vTRH C_6 - C_9	mg/kg	<25
Benzene	mg/kg	<0.2
Toluene	mg/kg	<0.5
Ethylbenzene	mg/kg	<1
m+p-xylene	mg/kg	<2
o-Xylene	mg/kg	<1
Surrogate aaa-Trifluorotoluene	%	104

sTRH in Soil (C10-C36)						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
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
Surrogate o-Terphenyl	%	93	90	90	95	89

sTRH in Soil (C10-C36)		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	16/11/2012
Date analysed	-	16/11/2012
TRHC$_{10}$ - C$_{14}$	mg/kg	<50
TRHC$_{15}$ - C$_{28}$	mg/kg	<100
TRHC$_{29}$ - C$_{36}$	mg/kg	<100
Surrogate o-Terphenyl	%	90

PAHs in Soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	17/11/2012	17/11/2012	17/11/2012	17/11/2012	17/11/2012
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
Surrogate p-Terphenyl-d_{14}	%	95	90	90	97	89

PAHs in Soil			
Our Reference:	UNITS	81724-6	81724-7
Your Reference	----------	304	BD2
Depth	----------	0.1-0.2	-
Date Sampled		7/11/2012	7/11/2012
Type of sample		Soil	Soil
Date extracted	-	16/11/2012	16/11/2012
Date analysed	-	17/11/2012	17/11/2012
Naphthalene	mg/kg	<0.1	<0.1
Acenaphthylene	mg/kg	<0.1	<0.1
Acenaphthene	mg/kg	<0.1	<0.1
Fluorene	mg/kg	<0.1	<0.1
Phenanthrene	mg/kg	<0.1	<0.1
Anthracene	mg/kg	<0.1	<0.1
Fluoranthene	mg/kg	0.2	<0.1
Pyrene	mg/kg	0.2	<0.1
Benzo(a)anthracene	mg/kg	<0.1	<0.1
Chrysene	mg/kg	<0.1	<0.1
Benzo(b+k)fluoranthene	mg/kg	<0.2	<0.2
Benzo(a)pyrene	mg/kg	<0.05	<0.05
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.1	<0.1
Dibenzo(a,h)anthracene	mg/kg	<0.1	<0.1
Benzo(g,h,i)perylene	mg/kg	<0.1	<0.1
Surrogate p-Terphenyl-d_{14}	%	92	87

Organochlorine Pesticides in soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
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	%	121	110	111	119	106

Organochlorine Pesticides in soil		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	16/11/2012
Date analysed	-	16/11/2012
HCB	mg/kg	<0.1
alpha-BHC	mg/kg	<0.1
gamma-BHC	mg/kg	<0.1
beta-BHC	mg/kg	<0.1
Heptachlor	mg/kg	<0.1
delta-BHC	mg/kg	<0.1
Aldrin	mg/kg	<0.1
Heptachlor Epoxide	mg/kg	<0.1
gamma-Chlordane	mg/kg	<0.1
alpha-chlordane	mg/kg	<0.1
Endosulfan I	mg/kg	<0.1
pp-DDE	mg/kg	<0.1
Dieldrin	mg/kg	<0.1
Endrin	mg/kg	<0.1
pp-DDD	mg/kg	<0.1
Endosulfan II	mg/kg	<0.1
pp-DDT	mg/kg	<0.1
Endrin Aldehyde	mg/kg	<0.1
Endosulfan Sulphate	mg/kg	<0.1
Methoxychlor	mg/kg	<0.1
Surrogate TCMX	%	112

Organophosphorus Pesticides						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Diazinon	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Dimethoate	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ronnel	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorpyriphos	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Fenitrothion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Bromophos-ethyl	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Ethion	mg/kg	<0.1	<0.1	<0.1	<0.1	<0.1
Surrogate TCMX	%	121	110	111	119	106

Organophosphorus Pesticides		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	16/11/2012
Date analysed	-	16/11/2012
Diazinon	mg/kg	<0.1
Dimethoate	mg/kg	<0.1
Chlorpyriphos-methyl	mg/kg	<0.1
Ronnel	mg/kg	<0.1
Chlorpyriphos	mg/kg	<0.1
Fenitrothion	mg/kg	<0.1
Bromophos-ethyl	mg/kg	<0.1
Ethion	mg/kg	<0.1
Surrogate TCMX	%	112

PCBs in Soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
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	%	121	110	111	119	106

PCBs in Soil		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	16/11/2012
Date analysed	-	16/11/2012
Arochlor 1016	mg/kg	<0.1
Arochlor 1221	mg/kg	<0.1
Arochlor 1232	mg/kg	<0.1
Arochlor 1242	mg/kg	<0.1
Arochlor 1248	mg/kg	<0.1
Arochlor 1254	mg/kg	<0.1
Arochlor 1260	mg/kg	<0.1
Surrogate TCLMX	%	112

Total Phenolics in Soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date extracted	-	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012
Date analysed	-	20/11/2012	20/11/2012	20/11/2012	20/11/2012	20/11/2012
Total Phenolics (as Phenol)	mg/kg	<5	<5	<5	<5	<5

Total Phenolics in Soil		
Our Reference:	UNITS	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date extracted	-	20/11/2012
Date analysed	-	20/11/2012
Total Phenolics (as Phenol)	mg/kg	<5

Acid Extractable metals in soil						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date digested	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012	16/11/2012	16/11/2012	16/11/2012
Arsenic	mg/kg	15	9	5	<4	8
Cadmium	mg/kg	<0.5	<0.5	<0.5	<0.5	<0.5
Chromium	mg/kg	23	28	8	13	30
Copper	mg/kg	23	20	8	10	23
Lead	mg/kg	10	12	5	18	12
Mercury	mg/kg	<0.1	<0.1	<0.1	0.3	0.2
Nickel	mg/kg	13	21	4	9	22
Zinc	mg/kg	20	23	12	53	35

Acid Extractable metals in soil			
Our Reference:	UNITS	81724-6	81724-7
Your Reference	----------	304	BD2
Depth	----------	0.1-0.2	-
Date Sampled		7/11/2012	7/11/2012
Type of sample		Soil	Soil
Date digested	-	16/11/2012	16/11/2012
Date analysed	-	16/11/2012	16/11/2012
Arsenic	mg/kg	21	8
Cadmium	mg/kg	<0.5	<0.5
Chromium	mg/kg	24	29
Copper	mg/kg	36	20
Lead	mg/kg	9	11
Mercury	mg/kg	<0.1	<0.1
Nickel	mg/kg	20	24
Zinc	mg/kg	50	25

Moisture						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date prepared	-	16/11/12	16/11/12	16/11/12	16/11/12	16/11/12
Date analysed	-	19/11/12	19/11/12	19/11/12	19/11/12	19/11/12
Moisture	%	13	24	18	21	25

Moisture			
Our Reference:	UNITS	81724-6	81724-7
Your Reference	----------	304	BD2
Depth	----------	0.1-0.2	-
Date Sampled		7/11/2012	7/11/2012
Type of sample		Soil	Soil
Date prepared	-	16/11/12	16/11/12
Date analysed	-	19/11/12	19/11/12
Moisture	%	20	23

Asbestos ID - soils						
Our Reference:	UNITS	81724-1	81724-2	81724-3	81724-4	81724-5
Your Reference	----------	301	301	302	303	TB
Depth	----------	0.1-0.2	1.0-1.2	0.1-0.2	0.1-0.2	1.0-1.2
Date Sampled		7/11/2012	7/11/2012	7/11/2012	7/11/2012	7/11/2012
Type of sample		Soil	Soil	Soil	Soil	Soil
Date analysed	-	19/11/2012	19/11/2012	19/11/2012	19/11/2012	19/11/2012
Sample mass tested	g	Approx 40g	Approx 40g	Approx 40g	Approx 40g	Approx 40g
Sample Description	-	Brown fine-grained soil & rocks	Brown fine-grained clayey soil	Brown fine-grained clayey soil & rocks	Brown coarse-grained soil	Brown fine-grained clayey 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	81724-6
Your Reference	----------	304
Depth	----------	0.1-0.2
Date Sampled		7/11/2012
Type of sample		Soil
Date analysed	-	19/11/2012
Sample mass tested	g	Approx 40g
Sample Description	-	Brown fine-grained clayey soil
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg
Trace Analysis	-	No respirable fibres detected

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.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID.
Org-012 subset	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-006	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC-ECD.
Inorg-030	Total Phenolics - determined colorimetrically following disitillation, based upon APHA 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 deg C for a minimum of 4 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
vTRH C_6 - C_9	mg/kg	25	Org-016	<25	81724-1	<25 || <25	LCS-1	96%
Benzene	mg/kg	0.2	Org-016	<0.2	81724-1	<0.2 || <0.2	LCS-1	104%
Toluene	mg/kg	0.5	Org-016	<0.5	81724-1	<0.5 || <0.5	LCS-1	97%
Ethylbenzene	mg/kg	1	Org-016	<1	81724-1	<1 || <1	LCS-1	90%
m+p-xylene	mg/kg	2	Org-016	<2	81724-1	<2 || <2	LCS-1	94%
o-Xylene	mg/kg	1	Org-016	<1	81724-1	<1 || <1	LCS-1	93%
Surrogate aaa-Trifluorotoluene	%		Org-016	114	81724-1	91 || 102 || RPD: 11	LCS-1	116%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
TRH C_{10} - C_{14}	mg/kg	50	Org-003	<50	81724-1	<50 || <50	LCS-1	88%
TRH C_{15} - C_{28}	mg/kg	100	Org-003	<100	81724-1	<100 || <100	LCS-1	97%
TRH C_{29} - C_{36}	mg/kg	100	Org-003	<100	81724-1	<100 || <100	LCS-1	97%
Surrogate o-Terphenyl	%		Org-003	90	81724-1	93 || 93 || RPD: 0	LCS-1	104%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			17/11/2012	81724-1	17/11/2012 || 17/11/2012	LCS-1	17/11/2012
Naphthalene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	92%
Acenaphthylene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Acenaphthene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Fluorene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	92%
Phenanthrene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	91%
Anthracene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Fluoranthene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	96%
Pyrene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	97%
Benzo(a)anthracene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Chrysene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	LCS-1	89%

QUALITY CONTROL PAHs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Benzo(b+k)fluoranthene	mg/kg	0.2	Org-012 subset	<0.2	81724-1	<0.2 || <0.2	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.05	Org-012 subset	<0.05	81724-1	<0.05 || <0.05	LCS-1	96%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.1	Org-012 subset	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%		Org-012 subset	73	81724-1	95 || 92 || RPD: 3	LCS-1	85%
QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
HCB	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
alpha-BHC	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	107%
gamma-BHC	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
beta-BHC	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	101%
Heptachlor	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	106%
delta-BHC	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Aldrin	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	110%
Heptachlor Epoxide	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	113%
gamma-Chlordane	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
alpha-chlordane	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan I	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
pp-DDE	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	99%
Dieldrin	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	112%
Endrin	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	109%
pp-DDD	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	97%
Endosulfan II	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
pp-DDT	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Endrin Aldehyde	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Endosulfan Sulphate	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	LCS-1	101%
Methoxychlor	mg/kg	0.1	Org-005	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCMX	%		Org-005	100	81724-1	121 || 111 || RPD: 9	LCS-1	108%

QUALITY CONTROL Organophosphorus Pesticides	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Diazinon	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Dimethoate	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Ronnel	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Chlorpyriphos	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	LCS-1	107%
Fenitrothion	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	LCS-1	109%
Bromophos-ethyl	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Ethion	mg/kg	0.1	Org-008	<0.1	81724-1	<0.1 || <0.1	LCS-1	111%
Surrogate TCMX	%		Org-008	100	81724-1	121 || 111 || RPD: 9	LCS-1	105%

QUALITY CONTROL PCBs in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Arochlor 1016	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1221	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1232	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1242	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1248	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Arochlor 1254	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	LCS-1	113%
Arochlor 1260	mg/kg	0.1	Org-006	<0.1	81724-1	<0.1 || <0.1	[NR]	[NR]
Surrogate TCLMX	%		Org-006	100	81724-1	121 || 111 || RPD: 9	LCS-1	115%

QUALITY CONTROL Total Phenolics in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/11/2012	81724-1	20/11/2012 || 20/11/2012	LCS-1	20/11/2012
Date analysed	-			20/11/2012	81724-1	20/11/2012 || 20/11/2012	LCS-1	20/11/2012
Total Phenolics (as Phenol)	mg/kg	5	Inorg-030	<5	81724-1	<5 || <5	LCS-1	103%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Date analysed	-			16/11/2012	81724-1	16/11/2012 || 16/11/2012	LCS-1	16/11/2012
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	81724-1	15 || 14 || RPD: 7	LCS-1	104%
Cadmium	mg/kg	0.5	Metals-020 ICP-AES	<0.5	81724-1	<0.5 || <0.5	LCS-1	95%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	81724-1	23 || 20 || RPD: 14	LCS-1	99%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	81724-1	23 || 18 || RPD: 24	LCS-1	102%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	81724-1	10 || 10 || RPD: 0	LCS-1	99%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	81724-1	<0.1 || <0.1	LCS-1	106%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	81724-1	13 || 11 || RPD: 17	LCS-1	99%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	81724-1	20 || 18 || RPD: 11	LCS-1	101%

QUALITY CONTROL Moisture	UNITS	PQL	METHOD	Blank
Date prepared	-			[NT]
Date analysed	-			[NT]
Moisture	%	0.1	Inorg-008	[NT]

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

QUALITY CONTROL vTRH & BTEX in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
vTRH C_6 - C_9	mg/kg	[NT]	[NT]	81724-2	95%
Benzene	mg/kg	[NT]	[NT]	81724-2	102%
Toluene	mg/kg	[NT]	[NT]	81724-2	96%
Ethylbenzene	mg/kg	[NT]	[NT]	81724-2	90%
m+p-xylene	mg/kg	[NT]	[NT]	81724-2	93%
o-Xylene	mg/kg	[NT]	[NT]	81724-2	92%
Surrogate aaa-Trifluorotoluene	%	[NT]	[NT]	81724-2	101%

QUALITY CONTROL sTRH in Soil (C10-C36)	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
TRH C_{10} - C_{14}	mg/kg	[NT]	[NT]	81724-2	86%
TRH C_{15} - C_{28}	mg/kg	[NT]	[NT]	81724-2	95%
TRH C_{29} - C_{36}	mg/kg	[NT]	[NT]	81724-2	97%
Surrogate o-Terphenyl	%	[NT]	[NT]	81724-2	113%

QUALITY CONTROL PAHs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	17/11/2012
Naphthalene	mg/kg	[NT]	[NT]	81724-2	92%
Acenaphthylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	[NT]	[NT]	81724-2	91%
Phenanthrene	mg/kg	[NT]	[NT]	81724-2	92%
Anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	[NT]	[NT]	81724-2	95%
Pyrene	mg/kg	[NT]	[NT]	81724-2	96%
Benzo(a)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	[NT]	[NT]	81724-2	88%
Benzo(b+k)fluoranthene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	[NT]	[NT]	81724-2	95%
Indeno(1,2,3-c,d)pyrene	mg/kg	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d_{14}	%	[NT]	[NT]	81724-2	91%

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
HCB	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-BHC	mg/kg	[NT]	[NT]	81724-2	110%
gamma-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
beta-BHC	mg/kg	[NT]	[NT]	81724-2	106%
Heptachlor	mg/kg	[NT]	[NT]	81724-2	110%
delta-BHC	mg/kg	[NT]	[NT]	[NR]	[NR]
Aldrin	mg/kg	[NT]	[NT]	81724-2	112%
Heptachlor Epoxide	mg/kg	[NT]	[NT]	81724-2	112%
gamma-Chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
alpha-chlordane	mg/kg	[NT]	[NT]	[NR]	[NR]
Endosulfan I	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDE	mg/kg	[NT]	[NT]	81724-2	101%
Dieldrin	mg/kg	[NT]	[NT]	81724-2	112%
Endrin	mg/kg	[NT]	[NT]	81724-2	107%
pp-DDD	mg/kg	[NT]	[NT]	81724-2	103%
Endosulfan II	mg/kg	[NT]	[NT]	[NR]	[NR]
pp-DDT	mg/kg	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	mg/kg	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL Organochlorine Pesticides in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Endosulfan Sulphate	mg/kg	[NT]	[NT]	81724-2	99%
Methoxychlor	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%	[NT]	[NT]	81724-2	112%
QUALITY CONTROL Organophosphorus Pesticides	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
Diazinon	mg/kg	[NT]	[NT]	[NR]	[NR]
Dimethoate	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos-methyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ronnel	mg/kg	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	mg/kg	[NT]	[NT]	81724-2	108%
Fenitrothion	mg/kg	[NT]	[NT]	81724-2	107%
Bromophos-ethyl	mg/kg	[NT]	[NT]	[NR]	[NR]
Ethion	mg/kg	[NT]	[NT]	81724-2	112%
Surrogate TCMX	%	[NT]	[NT]	81724-2	105%
QUALITY CONTROL PCBs in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
Arochlor 1016	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1221	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1232	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1242	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1248	mg/kg	[NT]	[NT]	[NR]	[NR]
Arochlor 1254	mg/kg	[NT]	[NT]	81724-2	114%
Arochlor 1260	mg/kg	[NT]	[NT]	[NR]	[NR]
Surrogate TCLMX	%	[NT]	[NT]	81724-2	115%
QUALITY CONTROL Total Phenolics in Soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date extracted	-	[NT]	[NT]	81724-2	20/11/2012
Date analysed	-	[NT]	[NT]	81724-2	20/11/2012
Total Phenolics (as Phenol)	mg/kg	[NT]	[NT]	81724-2	83%
QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Date digested	-	[NT]	[NT]	81724-2	16/11/2012
Date analysed	-	[NT]	[NT]	81724-2	16/11/2012
Arsenic	mg/kg	[NT]	[NT]	81724-2	87%
Cadmium	mg/kg	[NT]	[NT]	81724-2	81%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	Dup. Sm#	Duplicate Base + Duplicate + %RPD	Spike Sm#	Spike % Recovery
Chromium	mg/kg	[NT]	[NT]	81724-2	86%
Copper	mg/kg	[NT]	[NT]	81724-2	99%
Lead	mg/kg	[NT]	[NT]	81724-2	83%
Mercury	mg/kg	[NT]	[NT]	81724-2	108%
Nickel	mg/kg	[NT]	[NT]	81724-2	85%
Zinc	mg/kg	[NT]	[NT]	81724-2	88%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.

Asbestos ID was analysed by Approved Identifier:	Paul Ching
Asbestos ID was authorised by Approved Signatory:	Lulu Guo

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes and LCS: Generally 70-130% for inorganics/metals; 60-140% for organics and 10-140% for SVOC and speciated phenols is acceptable.

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CHAIN OF CUSTODY

Project: WAGGA HOSPITAL
Project No: 72320.06 Sampler: ...TS
Project Mgr: PMO...Mob. Phone: 0409 242 497
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12 Ashley Street, Chatswood NSW 2068
Attn: Tania Notaras
Phone: 02 9910 6200 Fax: 02 9910 6201
Email: tnotaras@envirolabservices.com.au

Sample ID	Sample Depth	Lab ID	Sampling Date	Sample Type S - soil W – water	Container type	Analytes: Combo 8a	Heavy metals (8)	TPH	OCP/OPP	PCB	PAH	Phenol	Asbestos	VOC	Combo 7a			Notes
301	0.1-0.2	1	7/11	S	G	X												
	1.0-1.2	2				X												
302	0.1-0.2	3				X												
303	0.1-0.2	4				X												
~~302~~	1.0-1.2	5				X												
304	0.1-0.2	6	↓	↓	↓	X												
BD2	"	7			↓		✓				X							

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 81724
Date Received: 15.11.12.
Time Received: 11.30.
Received by: D.L.
~~Temp: Cool/Ambient~~
Cooling: Ice/icepack
~~Security: Intact/Broken/None~~

Lab Report No.
Send Results to: Douglas Partners Address: 96 Hermitage Road, West Ryde 2114
Phone: (02) 9809 0666
Fax: (02) 9809 4095

Relinquished by:	Signed:	Date & Time:	Received By:	Date & Time:
C Falla		15.11.12	D.L.	15.11.12.