





Land Consultants Association Inc

Number: CC0325(12

Construction Certificate.

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Endorsed by:

Date

ABN 64 002 841 063

Job No: 12593/2 Our Ref: 12593/2-AA

21 February 2012

Mona Vale Golf Club Ltd 1 Golf Avenue MONA VALE NSW 2103

Attention: Mr A Thompson

Dear Sir

re: **Proposed Above Ground Fuel Storage Tank Installation** Mona Vale Golf Club – 1 Golf Avenue, Mona Vale **Preliminary Contamination Assessment**

PITTWATER COUNCIL CONSTRUCTION CERTIFICATE

This is a copy of submitted plans, documents or Certificates associated with the issue of the

Further to the Preliminary Contamination Report (PCA) dated 23-December 2012, prepared by Geotechnique Pty Ltd (Geotechnique) for the above site (indicated on Figure 1 below) and as requested, one additional soil sample was recovered from the area proposed for installation of above-ground fuel storage tank (AFST) as indicated on Drawing No 12593/2-AA1 in Attachment A.

| | FIGURE 1 |
|---|---|
| Primary Tennis | ARTING CALL AND CALL |
| Ret VIII Tree | Home 2 CA SISC Beagh |
| S CE S S Stateboard S CE S S ST Vill S S S 12 TURIMETTA ST S | Mona Vale (Beeby Park) |
| 35 13 ST 2 30 ST 2 ROWAN ST 2 13 M LL | Golf Club |
| Sol And | Mona Vale Rec |

The objective of sampling and testing was to assess the contamination status of the soil and determine whether the soil presents a risk of harm to human health and the environment for the proposed AFST development.

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FIELD WORK & LABORATORY TESTING

An Environmental Scientist (Mr A Nguyen) from Geotechnique, who was responsible for sampling and logging the materials at the sampling location, carried out the field work on 27 January 2012, in accordance with Geotechnique standard sampling procedures.

Based on the site inspection and sampling, the proposed area was all concrete covered. The soil sample recovered from below the concrete, BH101 (0.1-0.2m), indicated fill comprising sand, fine grain, yellow, brown. The recovered sample did not reveal any visual evidence of asbestos or other indicators of contamination, such as staining, odours or significant foreign matter. A calibrated Photo Ionization Detector (PID) was used to screen for the presence of potential volatile organic compounds (VOC) and the screening indicated no VOC within the soils.

The recovered sample was forwarded under COC conditions to the National Association of Testing Authorities (NATA) accredited laboratories, SGS Environmental Services (SGS) (primary) and Envirolab (Secondary). On receipt of the samples, the laboratories returned the Sample Receipt Advice, verifying the integrity of all the samples received.

LABORATORY ANALYSIS

The recovered sample was analysed for potential common contaminants (see Attached Table A), which include Metals, such as Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni) and Zinc (Zn), Total Petroleum Hydrocarbons (TPH), BTEX (Benzene, Toluene, Ethyl Benzene and Xylenes), Polycyclic Aromatic Hydrocarbons (PAH), Organochlorine Pesticides (OCP), Polychlorinated Biphenyls (PCB), Phenols and Cyanides.

FIELD AND LABORATORY QUALITY ASSURANCE/QUALITY CONTROL PROCEDURES Field Quality Assurance (QA)/ Quality Control (QC)

In order to ensure the integrity and reliability of the chemical analysis carried out, the following field QA/QC procedures were implemented for the sampling and analytical program.

Rinsate Sample

A rinsate water sample (Rinsate R1) was recovered on completion of field work in order to identify possible cross contamination between the sampling locations. A sample of the same water source used for cleaning the equipment (clean distilled water) was previously analysed by the primary laboratory, thus with known concentrations of the selected analytes. The concentrations of the analytes in the rinsate sample were then compared with the results of the original distilled water.

The test results are summarised in Table E. The analyte concentrations of the rinsate blank samples were not significantly different from the clean distilled water sample, which indicates that adequate decontamination had been carried out in the field.

<u>Trip Spike</u>

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

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

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

A trip spike sample (TS1) was forwarded to the primary analytical laboratory with the samples collected from the site, and was tested for BTEX. The test results for the trip spike sample, reported as a percentage recovery of the applied and known spike concentrations, are shown in Table F.

As indicated in Table F, the results show a good recovery of the spike concentrations, ranging between 97% and 99%.

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

Duplicate Sample

The duplicate frequency adopted complies with the National Environmental Protection Measure (NEPM), which recommends a duplicate frequency of at least 5%.

The laboratory test results certificates from SGS are included in Attachment C. The duplicate sample results are summarised in Table G.

A comparison was made of the laboratory test results for the duplicate sample with the original sample and the Relative Percentage Differences (RPD) were computed, in order to assess the accuracy of the laboratory test procedures. RPD within 50% are generally considered acceptable. However, this variation can be higher for organic analysis than for inorganics and for low concentrations of analytes.

As shown in Table G, the comparisons between the duplicate and corresponding original sample indicated acceptable RPD overall, with the exception of relatively high RPD (67%) for total phenols. Due to the low concentrations, this result is not considered critical.

Based on the duplicate sample number and comparisons, it is concluded that the test results provided by SGS can be relied upon for this assessment.

Split Sample

A split sample provides a check on the analytical performance of the primary laboratory. The split sample was prepared based on sample numbers recovered during field work and the analyses undertaken by the primary laboratory.

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

The laboratory test results certificates from Envirolab are included in Attachment C. The split sample results are summarised in Table H.

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

As shown in Table H, comparisons between the splits and corresponding original samples indicated generally acceptable RPD overall, with the exception of some higher RPDs for metals. Due to the relatively low concentrations, these results are not considered critical.

Based on the overall split sample number and comparisons, it is concluded that the test results provided by the primary laboratory may be relied upon for this assessment.

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LABORATORY QA/QC

Only laboratories accredited by the NATA for chemical analyses were used for analysis of samples recovered as part of this assessment. The laboratory must also incorporate quality laboratory management systems to ensure that trained analysts, using validated methods and suitably calibrated equipment, produce reliable results.

In addition to the quality control samples, the laboratory must also ensure that all analysts receive certification as to their competence in carrying out the analysis and participate in national and international proficiency studies. SGS and Envirolab, the two laboratories used for this assessment, are both accredited by NATA. The two laboratories also operate Quality Systems that are designed to comply with ISO/IEC 17025.

We have checked the QA/QC procedures and results adopted by the laboratories against the appropriate guidelines. The quality control sample numbers adopted by SGS and Envirolab are considered adequate for the analyses undertaken and generally conform to recommendations provided in the NEPM 1999 "*Guideline on Laboratory Analysis of Potentially Contaminated Soils*" (Reference 2) and Australian and New Zealand Environment and Conservation Council (ANZECC) -1996 "*Guidelines for the Laboratory Analysis of Contaminated Soils*".

Overall, it is considered that the quality assurance and quality control data quality indicators have been complied with, both in the field and in the laboratory. As such, it is concluded that the laboratory test data obtained as part of this assessment is reliable and useable for this assessment

ASSESSMENT CRITERIA

The assessment criteria adopted were the available Health-based Investigation Levels (HBILs) / Health Investigation Levels (HILs) for *parks, recreational open space and playing fields* development (NEHF 'E' / HILs 'E'), the provisional phytotoxicity based investigation levels (PPBILs) / Ecological Investigation Levels (EILs) and the suggested Levels in the EPA service station guidelines.

LABORATORY TEST RESULTS, ASSESSMENT & DISCUSSION

Reference may be made to the attached laboratory analytical report from SGS and Envirolab. The test results, including schedule of testing are also presented in Tables A to D, together with the assessment criteria adopted. A discussion of the test results is presented in the following sub-sections.

Metals (As, Cd, Cr, Cu, Pb, Hg, Ni & Zn)

The metals test results are presented in Table B. The concentrations of metals (As, Cd, Cr, Cu, Pb, Hg, Ni and Zn) for the analysed sample were well below the relevant PPBIL and NEHF 'E' adopted.

TPH and BTEX

The TPH and BTEX test results are presented in Table C.

As indicated, the concentrations of TPH/BTEX were less than the relevant EPA Level adopted.

Polycyclic Aromatic Hydrocarbons (PAH)

As shown in Table D, the concentrations of benzo(a)pyrene and Total PAH for the analysed soil samples were well below the NEHF 'E' adopted.

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Organochlorine Pesticides (OCP), Polychlorinated Biphenyls (PCB), Total Phenols and Total Cyanides

The OCP, PCB, total Phenols and total Cyanides test results are presented in Table D and as shown, the concentrations of the analysed soil sample were well below the relevant NEHF 'E' adopted.

CONCLUSION AND LIMITATIONS

Based on the test results of sample BH101, the fill (sand) in the area proposed for above-ground storage tank, at 1 Golf Avenue, Mona Vale Golf Club, Mona Vale, is assessed not to pose a risk of harm to human health and environment for the proposed development.

This report has been prepared for the purpose stated within. This report may be relied upon by relevant authorities for development. Any reliance on this report by other parties shall be at such parties' sole risk, as the report might not contain sufficient information for other purposes.

This report shall only be presented in full and may not be used to support any other objective than those set out in the report, except where written approval is provided by Geotechnique.

The information in this report is considered accurate at completion of field sampling on 27 January 2012. Any variations to the site beyond this date might nullify the conclusions stated. If there are any variations in site conditions beyond this date, such as imported fill, chemical spillage, illegal dumping, etc., further assessment will be required and the conclusion stated herein could be nullified.

If any suspect materials (identified by unusual staining, odour, discolouration or inclusions such as building rubble, asbestos sheets/pieces, ash material, etc) are encountered during any stage of future earthworks/site preparation, we recommend that this office is contacted for assessment. In the event of contamination, detailed assessment, remediation and validation will be necessary.

Reference should be made to the "Environmental Notes" in Attachment D, for details of the limitations of this assessment.

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

Yours faithfully GEOTECHNIQUE PTY LTD

DANDA SAPKOTA Senior Environmental Engineer

> Attachment A Attachment B Attachment C: Attachment D:

Drawing Nos 12593/2-AA1 Attached Schedule of testing and Laboratory Test Results Summary Tables (A-H) Laboratory Test Report /Certificate of Analysis Environmental Notes

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ATTACHMENT A

Drawing No 12593/2-AA1

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Sample Location



ATTACHMENT B

- TABLE ALaboratory Testing Schedule
- TABLE B Heavy Metals Test Results
- TABLE C Total Petroleum Hydrocarbons (TPH) and BTEX Test Results
- TABLE DBenzo(a)Pyrene, Polycyclic Aromatic Hydrocarbons, Organochlorine
- Pesticides, Polychlorinated Biphenyls, Phenols and Cyanides Test Results
- TABLE ERinsate Sample
- TABLE F Trip Spike Sample
- TABLE G Duplicate Sample
- TABLE H Split Sample



TABLE A SCHEDULE OF LABORATORY TESTING (Ref No: 12593/2-AA)

| Analyte / | | TYPE | SAMPLING DATE | DUPLICATE | SPLIT | METALS | TPH & BTEX | РАН | OCP | РСВ | PHENOLS | CYANIDES |
|------------|-----------|------|------------------|-----------|-------|----------|---------------|----------|-----|-----|---------|----------|
| Sample | Depth (m) | | | | | | | | | | | |
| BH101 | 0.1-0.2 | F | 27/01/2012 | D101 | S101 | ~ | ~ | ~ | ~ | > | ~ | ~ |
| | | | | | | | | | | | | |
| Rinsate R1 | | | 27/01/2012 | | | V | v | ~ | | | | |

Notes

METALS: arsenic, cadmium, chromium, copper, lead, mercury, nickel & zinc

TPH: Total Petroleum Hydrocarbons BTEX: Benzene, Toluene, Ethyl Benzene, total Xylenes

F: Fill

PAH: Polycyclic Aromatic Hydrocarbons OCP: Organochlorine Pesticides PCB: Polychlorinated Biphenyls

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TABLE B HEAVY METALS TEST RESULTS **DISCRETE SAMPLE**

(Ref No: 12593/2-AA)

| / | Analyte | HEAVY METALS (mg/kg) | | | | | | | |
|-----------------------------|--|----------------------|---------|--------------------|--------|------|--------------------|--------|-------|
| Sample Location | Depth (m) | ARSENIC | CADMIUM | CHROMIUM | COPPER | LEAD | MERCURY | NICKEL | ZINC |
| BH101 | 0.1-0.2 | 4 | <0.3 | 5.8 | 3.1 | 3 | <0.05 | 1,9 | 5.2 |
| Limits of Reporting (LOR) | | 3 | 0.3 | 0.3 | 0.5 | 1 | 0.05 | 0.5 | 0.5 |
| GUIDELINES FOR THE N | sw | | | | | | | | |
| SITE AUDITOR SCHEME | (2006) | | | | | | | | |
| Provisional Phytotoxity-Bas | ed | | | | | | | | |
| Investigation Levels | | 20 | 3 | 400/1 ^b | 100 | 600 | 1 | 60 | 200 |
| Health-Based Investigation | Levels ^a (NEHF E) | 200 | 40 | 24%/200 ° | 2000 | 600 | 20/30 ^d | 600 | 14000 |
| Notes a: Parks | Notes a: Parks, recreational open space, playing fields and secondary schools. | | | | | | | | |

Notes

b:

400mg/kg for Chromium (+3) and 1mg/kg for Chromium (+6). Chromium (Cr) may exist in a number of states. Cr (+6) is easily reduced to form the most stable Cr (+3) whenever exposed to the atmosphere. Therefore Cr (+3) is adopted for this assessment.

24% (240000mg/kg) for Chromium (+3) and 200mg/kg for Chromium (+6). c:

d: 20mg/kg for Methyl Mercury and 30mg/kg for Inorganic Mercury.



TABLE C TOTAL PETROLEUM HYDROCARBONS (TPH) AND BTEX TEST RESULTS DISCRETE SAMPLE (Ref No: 12593/2-AA)

| | (| NO. 12 | | / | | | | | | |
|---------------------------|--------|-------------|-----------|----------|------------|----------|--------------|---------------|---------------|--|
| Analyte | | TPH (mg/kg) | | | | | BTEX (mg/kg) | | | |
| | 60-90 | C10-C14 | C15-C28 | C29-C40 | C10-C40 ª | BENZENE | TOLUENE | ETHYL BENZENE | TOTAL XYLENES | |
| Sample Location Depth (m) | | | | | | | | | | |
| BH101 0.1-0.2 | <20 | <20 | <50 | <150 | 220 | <0.1 | <0.1 | <0.1 | <0.3 | |
| LOR | 20 | 20 | 50 | 150 | NA | 0.1 | 0.1 | 0.1 | 0.3 | |
| EPA Levels ^b | 65 | | C1 | 0-C40 = | 1000 | 1 | 1.4 | 3.1 | 14 | |
| Notes a: C10-C40 = (C10 | D-C14) | + (C15-C2 | 28) + (C2 | 29-C40); | concentral | ions les | s than P | QL are a | assum | |

a: C10-C40 = (C10-C14) + (C15-C28) + (C29-C40); concentrations less than PQL are assumed equal to PQL.

b: Contaminated Sites: "Guidelines for Assessing Service Station Sites", 1994, EPA

NA: Not Applicable



TABLE D BENZO(a)PYRENE, POLYCYCLIC AROMATIC HYDROCARBONS (PAH), ORGANOCHLORINE PESTICIDES (OCP), POLYCHLORINATED BIPHENYLS (PCB), PHENOLS AND CYANIDES TEST RESULTS DISCRETE SAMPLE

(Ref No: 12593/2AA)

| | | | | | | ochlorin | eresu | | ng/ng/ | | | | |
|--|-----------|------------------------|-------------------|------------|-----------------|-----------------|-------|-------|--------|-------------------------|-------------------|-----------------------|--------------------------------------|
| | | BENZO(a)PYRENE (mg/kg) | TOTAL PAH (mg/kg) | HEPTACHLOR | ALDRIN | DIELDRIN | DDD | DDE | DDT | CHLORDANE (trans & cis) | TOTAL PCB (mg/kg) | TOTAL PHENOLS (mg/kg) | TOTAL CYANIDES (mg/kg) |
| Sample Location | Depth (m) | | | | | | | | | | | | |
| BH101 | 0.1-0.2 | <0.1 | <0.8 | <0.1 | <0.1 | <0.05 | <0.2 | <0.2 | <0.2 | <0.2 | <1 | 0.2 | <0.1 |
| LOR | | 0.05 | NA | 0.1 | 0.1 | 0.05 | 0.2 | 0.2 | 0.2 | 0.2 | 1 | 0.1 | 0.1 |
| GUIDELINES FOR THE NSW SITE AUDITOR SCHEME (204 Health-Based Investigation Lev | • | 2 | 40 | 20 | 20 ^b | 20 ^b | | 400 ° | | 100 | 20 | 17000 | 500 ^d / 1000 ^e |

Aldrin + Dieldrin b:

Total of DDD + DDE + DDT C;

d: Cyanide (free)

Cyanide (complex) e:

NA: Not Applicable



TABLE E RINSATE SAMPLE (Ref No: 12593/2-AA)

| (Ref NO: 12593/2-AA) | | | | | | | | | | |
|-------------------------------|-----------|-----------------|--|--|--|--|--|--|--|--|
| | RINSATE | CLEAN | | | | | | | | |
| ANALYTE | R1 | DISTILLED WATER | | | | | | | | |
| | (mg/L) | (mg/L) | | | | | | | | |
| HEAVY METALS | | | | | | | | | | |
| Arsenic | <0.05 | <0.05 | | | | | | | | |
| Cadmium | <0.005 | <0.002 | | | | | | | | |
| Chromium | <0.005 | <0.005 | | | | | | | | |
| Copper | <0.01 | <0.01 | | | | | | | | |
| Lead | <0.02 | <0.02 | | | | | | | | |
| Mercury | <0.0001 | <0.0005 | | | | | | | | |
| Nickel | <0.01 | <0.009 | | | | | | | | |
| Zinc | <0.01 | <0.006 | | | | | | | | |
| TOTAL PETROLEUM HYDROCARBONS | (TPH) | | | | | | | | | |
| C6 - C9 | 0.099 | <0.04 | | | | | | | | |
| C10 - C14 | <0.1 | <0.10 | | | | | | | | |
| C15 - C28 | <0.2 | <0.20 | | | | | | | | |
| C29 - C40 | <0.4 | <0.20 | | | | | | | | |
| BTEX | | | | | | | | | | |
| Benzene | <0.0005 | <0.001 | | | | | | | | |
| Toluene | <0.0005 | <0.001 | | | | | | | | |
| Ethyl Benzene | <0.0005 | <0.001 | | | | | | | | |
| Total Xylenes | <0.0015 | <0.003 | | | | | | | | |
| POLYCYCLIC AROMATIC HYDROCARB | ONS (PAH) | | | | | | | | | |
| Benzo(a)Pyrene | <0.0001 | <0.0005 | | | | | | | | |
| Total PAH | <0.001 | 0.008 | | | | | | | | |



TABLE F TRIP SPIKE SAMPLE (Ref No: 12593/2-AA)

| | TRIP |
|---------------|-------|
| ANALYTE | SPIKE |
| | TS1 |
| BTEX | |
| Benzene | 99% |
| Toluene | 97% |
| Ethyl Benzene | 97% |
| Total Xylenes | 98% |
| 1 | |

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

Mona Vale Golf Club Ltd DS.mh/21.02.2012

TABLE G DUPLICATE SAMPLE (Ref No: 12593/2-AA)

| (Rei N | <u>lo: 12593/2-A</u> | ~) | |
|--|----------------------|-----------|---------------------|
| | BH101 | DUPLICATE | RELATIVE PERCENTAGE |
| ANALYTE | 0.1-0.2m | D101 | DIFFERENCE |
| | mg/kg | mg/kg | % |
| HEAVY METALS | | | |
| Arsenic | 4 | 3 | 29 |
| Cadmium | <0.3 | <0.3 | - |
| Chromium | 5.8 | 4.5 | 25 |
| Copper | 3.1 | 5.1 | 49 |
| Lead | 3 | 2 | 40 |
| Mercury | <0.05 | <0.05 | - |
| Nickel | 1.9 | 2.6 | 31 |
| Zinc | 5.2 | 7.3 | 34 |
| TOTAL PETROLEUM HYDROCARBONS (TPH) | | | |
| C6 - C9 | <20 | <20 | - |
| C10 - C14 | <20 | <20 | - |
| C15 - C28 | <50 | <50 | - |
| C29 - C40 | <150 | <150 | - |
| BTEX | | | |
| Benzene | <0.1 | <0.1 | - |
| Toluene | <0.1 | <0.1 | - |
| Ethyl Benzene | <0.1 | <0.1 | - |
| Total Xylenes | <0.3 | <0.3 | - |
| POLYCYCLIC AROMATIC HYDROCARBONS (PAH) | | | |
| BENZO(a)PYRENE | <0.1 | <0.1 | - |
| Total PAH | <0.8 | <0.8 | - |
| ORGANOCHLORINE PESTICIDES (OCP) | | | |
| Heptachlor | <0.1 | <0.1 | - |
| Aldrin | <0.1 | <0.1 | - |
| Dieldrin | <0.05 | <0.05 | - |
| DDD | <0.2 | <0.2 | - |
| DDE | <0.2 | <0.2 | · · |
| DDT | <0.2 | <0.2 | - |
| Chlordane (trans & cis) | <0.2 | <0.2 | - |
| POLYCHLORINATED BIPHENYLS (PCB) | | | |
| Total PCB | <1 | <1 | - |
| PHENOLS & CYANIDES | | | |
| Total Phenols | 0.2 | 0.1 | 67 |
| Total Cyanides | <0.1 | <0.1 | - |

TABLE H SPLIT SAMPLE (Ref No: 12593/2-AA)

| | BH101 | SPLIT SAMPLE | RELATIVE PERCENTAGE |
|---|----------|--------------|---------------------|
| ANALYTE | 0.1-0.2m | S101 | DIFFERENCE |
| | mg/kg | mg/kg | |
| | (SGS) | (ENVIROLAB) | % |
| HEAVY METALS | | | |
| Arsenic | 4 | <4 | - |
| Cadmium | <0.3 | <0.5 | - |
| Chromium | 5.8 | 5 | 15 |
| Copper | 3.1 | 5 | 47 |
| Lead | 3 | 2 | 40 |
| Mercury | <0.05 | <0.1 | - |
| Nickel | 1.9 | 3 | 45 |
| Zinc | 5.2 | 5 | 4 |
| TOTAL PETROLEUM HYDROCARBONS (TPH) | | | |
| C6 - C9 | <20 | <25 | - |
| C10 - C14 | <20 | <50 | - |
| C15 - C28 | <50 | <100 | - |
| C29 - C40 or *** C29-C36 for Envirolab*** | <150 | <100 | - |
| BTEX | | | |
| Benzene | <0.1 | <0.2 | - |
| Toluene | <0.1 | <0.5 | - |
| Ethyl Benzene | <0.1 | <1 | - |
| Total Xylenes | <0.3 | <3 | - |
| POLYCYCLIC AROMATIC HYDROCARBONS (PAH) | | | |
| Benzo(a)Pyrene | <0.1 | <0.05 | - |
| Total PAH | <0.8 | <1.55 | - |
| ORGANOCHLORINE PESTICIDES (OCP) | | | |
| Heptachlor | <0.1 | <0.1 | - |
| Aldrin | <0.1 | <0.1 | - |
| Dieldrin | <0.05 | <0.1 | - |
| DDD | <0.2 | <0.2 | - |
| DDE | <0.2 | <0.2 | - |
| DDT | <0.2 | <0.2 | - |
| Chlordane (trans & cis) | <0.2 | <0.2 | - |
| POLYCHLORINATED BIPHENYLS (PCB) | | | |
| Total PCB | <1 | <0.7 | - |
| PHENOLS & CYANIDES | | | |
| Total Phenols | 0.2 | <5 | - |
| Total Cyanides | <0.1 | <0.5 | - |



SGS ANALYTICAL REPORT AND ENVIROLAB CERTIFICATE OF ANALYSIS

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ANALYTICAL REPORT



| | | LABORATORY DETAIL | .S |
|--------------|----------------------------------|-------------------|--|
| Contact | John Xu | Manager | Huong Crawford |
| Client | Geotechnique | Laboratory | SGS Alexandria Environmental |
| Address | P.O. Box 880 PENRITH NSW 2751 | Address | Unit 16, 33 Maddox St Alexandria NSW 2015 |
| Telephone | 02 4722 2700 | Telephone | +61 2 8594 0400 |
| Facsimile | 02 4722 6161 | Facsimile | +61 2 8594 0499 |
| Email | john.xu@geotech.com.au | Email | au.environmental.sydney@sgs.com |
| Project | 12593/2 - Mona Vale | SGS Reference | SE105013 R0 |
| Order Number | (Not specified) | Report Number | 0000017500 |
| Samples | 4 | Date Reported | 07 Feb 2012 |
| | | Date Received | 27 Jan 2012 |

COMMENTS .

The document is issued in accordance with NATA's accreditation requirements.

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(4354).

SIGNATORIES _

/sr

Andy Sutton Organics Chemist

Amore

Huong Crawford Laboratory Manager

Dong Liang Inorganics Metals Team Leader

Member _____

Ly Kim Ha Organics Supervisor

Stoward Ibrahum

Edward Ibrahim Business Manager

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Environmental Services

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t +61 2 8594 0400 f +61 2 8594 0499

www.au.sgs.co



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ANALYTICAL REPORT

| `````````````````````````````````````` | | No. 11 1 10 - 10 | r SE105013.001 | SE105013.002 | SE105013.003 | SE105013.004 |
|---|-------------------------------|------------------------------|----------------|-------------------------------|---------------------------|------------------------------|
| | | Sample Numbe Sample Matri | x Soil | Soil | Water | Soli |
| | | Sample Dat Sample Nam | | 27 Jan 2012 Duplicate D101 | 27 Jan 2012 Rinsate R1 | 27 Jan 2012 Tripspike TS1 |
| | | dan nga o na m | | | etando en aj | |
| Parameter | Units | LOR | | | | |
| VOC's in Soil Method: AN433/A | N434 | | | | | |
| Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | mg/kg | | <0.1 | <0.1 | - | [99%] |
| Toluene | mg/kg | | <0.1 | <0.1 | - | [97%] |
| Ethylbenzene | mg/kg | | <0.1 | <0.1 | - | [97%] |
| m/p-xylene | mg/kg | | <0.2 | <0.2 | - | [99%] [98%] |
| o-xylene | mg/kg | 0.1 | <0.1 | <0.1 | - | [30.96] |
| Oxygenated Compounds | | | | | | |
| MIBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 | <0.1 | - | <0.1 |
| mbe (notification buy, only) | | | | | | |
| Surrogates | | | | | | |
| | % | _ | 100 | 95 | - | 98 |
| Dibromofluoromethane (Surrogate) d4-1,2-dichloroethane (Surrogate) | % | - | 101 | 97 | - | 95 |
| da-toluene (Surrogate) | % | - | 104 | 102 | - | 99 |
| Bromofluorobenzene (Surrogale) | % | - | 105 | 106 | - | 119 |
| | | | | | | |
| Totals | | | | | | |
| Total Xylenes* | mg/kg | g 0.3 | <0.3 | <0.3 | - | - |
| Total BTEX* | mg/kg | , - | 0 | 0 | - | - |
| | | | | | | |
| Volatile Petroleum Hydrocarbon | s in Soil Method: AN433/AN4 | 134 | | | | |
| TRH C6-C9 | mg/k | g 20 | <20 | <20 | - | - |
| | | | | | | |
| Surrogates | | | | | | |
| Trifluorotoluene (Surrogate) | % | - | 76 | 87 | - | - |
| Dibromofluoromethane (Surrogate) | % | - | - | • | | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | - |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogale) | % | - | - | - | - | - |
| TRH (Total Recoverable Hydroc | arbons) in Soil – Method: AN4 | 03 | | | | |
| | | | | | | |
| TRH C10-C14 | mg/k | | <20 | <20 | - | - |
| TRH C15-C28 | mg/k | | <50 <150 | <50 <150 | - | _ |
| TRH C29-C40 | mg/k | ig 150 | < 150 | - 100 | - | |
| Surrogates | | | | | | |
| TRH (Surrogate) | % | - | - | - | - | - |
| (14) (Gulogato) | | | | | | |
| PAH (Polynuclear Aromatic Hyd | rocarbons) in Soil Method: / | 4N420 | | | | |
| i Milli Giffibeloar Frienado Fife | | | | | | |
| Naphthalene | mg/ | ÷ | <0.1 | <0.1 | - | - |
| 2-methylnaphthalene | mg/ | | <0.1 | <0.1 | - | |
| 1-methylnaphthalene | mg/ | | <0.1 | <0.1 <0.1 | - | |
| Acenaphthylene | mg/i | | <0.1 <0.1 | <0.1 | - | - |
| Acenaphthene | mg/i mg/i | - | <0.1 | <0.1 | - | • |
| Fluorene Phenanthrene | mg/ | - | <0.1 | <0.1 | - | • |
| Anthracene | mg/ | • | <0.1 | <0.1 | - | - |
| Fluoranthene | mg/ | - | <0.1 | <0.1 | - | - |
| Pyrene | mg/ | | <0.1 | <0.1 | - | - |
| Benzo(a)anthracene | mg/ | | <0.1 | <0.1 | - | - |
| Chrysene | mg/ | | <0.1 | <0.1 | - | - |
| Benzo(b)fluoranthene | mg/ | kg 0.1 | <0.1 | <0.1 | - | . - |
| Benzo(k)fluoranthene | mg/ | kg 0.1 | <0.1 | <0.1 | - | |
| Benzo(a)pyrene | mg/ | | <0.1 | <0.1 | - | - |
| Indeno(1,2,3-cd)pyrene | mg/ | | <0.1 | <0.1 | - | - |
| Dibenzo(a&h)anthracene | mg/ | 'kg 0.1 | <0.1 | <0.1 | - | - |
| | | | | | | |



ANALYTICAL REPORT

| | 5) | nple Number ample Matrix Sample Date ample Name LOR | SE105013.001 Soil 27 Jan 2012 BH101_0.1-0.2 | SE105013.002 Soli 27 Jan 2012 Duplicate D101 | SE105013.003 Water 27 Jan 2012 Rinsate R1 | SE105013.004 Soll 27 Jan 2012 Tripspike TS1 |
|--|-------|---|--|---|--|--|
| Parameter PAH (Polynuclear Aromatic Hydrocarbons) in So | | | d) | | | |
| Benzo(ghi)perylena | mg/kg | 0.1 | <0.1 | <0.1 | | - |
| Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | - | - |
| Surrogates | | | | | | |
| d5-nitrobenzene (Surrogale) | % | - | 87 | 101 | - | - |
| 2-fluorobiphenyl (Surrogate) | % | - | 99 | 110 | - | - |
| d14-p-terphenyl (Surrogate) | % | - | 104 | 110 | - | • |
| OC Pesticides in Soil Method: AN400/AN420 | | | | | | |
| Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Lindane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Heptachlor | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Aldrin | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Delta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Alpha Chiordane | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| trans-Nonachlor | mg/kg | 0,1 | <0.1 | <0.1 | - | - |
| p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Dieldrin | mg/kg | 0.05 | <0.05 | <0.05 | - | - |
| Endrin | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| o,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Methoxychior | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Endrin Ketone | mg/kg | 0.1 | <0.1 | <0.1 | - | - |



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ANALYTICAL REPORT

SE105013 R0

| Parameter | S: S Units | nple Number ample Matrix Sample Date ample Name LOR | SE105013.001 Soil 27 Jan 2012 BH101_0.1-0.2 | SE105013.002 Soil 27 Jan 2012 Duplicate D101 | SE105013.003 Water 27 Jan 2012 Rinsato R1 | SE105013.004 Soli 27 Jan 2012 Tripspike TS1 |
|---|------------------|---|--|---|--|--|
| OC Pesticides in Soil Method: AN400/AN420 (continue | nuj | | | | | |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 128 | 128 | - | - |
| PCBs in Soil Method: AN400/AN420 | | | | | | |
| Arochior 1016 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | - | • |
| Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochior 1254 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1260 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | - | • |
| Surrogates | | | | | | |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 128 | 128 | - | - |
| Total Phenolics in Soil Method: AN289 | mg/kg | 0.1 | 0.2 | 0.1 | - | - |
| Total Cyanide in soil by Discrete Analyser (Aquakem) | Method: | AN077/AN28 | 7 | | | |
| Total Cyanide | mg/kg | 0.1 | <0.1 | <0.1 | - | - |
| Total Recoverable Metals in Soil by ICPOES from EPA 2 | 200.8 Dige | st Method: | AN040/AN320 | | | |
| Arsenic, As | mg/kg | 3 | 4 | 3 | - | - |
| Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | - | - |
| Chromium, Cr | mg/kg | 0.3 | 5.8 | 4.5 | - | - |
| Copper, Cu | mg/kg | 0.5 | 3.1 | 5.1 | - | - |
| Lead, Pb | mg/kg | 1 | 3 | 2 | - | - |
| Nickel, Ni | mg/kg | 0.5 | 1.9 | 2.6 | - | - |
| Zinc, Zn | mg/kg | 0.5 | 5.2 | 7.3 | - | - |
| Mercury in Soil Method: AN312 | | | | | | |
| Mercury | mg/kg | 0.05 | <0.05 | <0.05 | - | - |
| VOCs in Water Method: AN433/AN434 Monocyclic Aromatic Hydrocarbons | | | | | | |
| Benzene | µg/L | 0.5 | - | - | <0.5 | - |
| Toluene | µg/L | 0.5 | - | - | <0.5 | - |
| Ethylbenzene | µg/L | 0.5 | - | - | <0.5 | - |
| m/p-xylene | µց/∟ | 1 | - | - | <1 | - |
| o-xylene | µg/L | 0.5 | - | - | <0.5 | - |



ANALYTICAL REPORT

SE105013 R0

| | San | ole Number ople Matrix | SE105013.001 Soil | SE105013.002 Soll | SE105013.003 Water | SE105013:004 Soli |
|---|------------------|---------------------------|------------------------------|-------------------------------|---------------------------|------------------------------|
| | Sar | ample Date nple Name | 27 Jan 2012 BH101_0.1-0.2 | 27 Jan 2012 Duplicate D101 | 27 Jan 2012 Rinsate R1 | 27 Jan 2012 Tripspike TS1 |
| Parameter | Units | 14013 | | | | |
| VOCs in Water Method: AN433/AN434 (continued) | | - | | | | |
| Oxygenated Compounds | | | | | _ | |
| MIBE (Methyl-tert-butyl ether) | µg/L | 0.5 | - | - | <0.5 | - |
| | | | | | | |
| Surrogales | | | | | | |
| Dibromofluoromethane (Surrogale) | % | - | - | - | 96 | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | 99 | - |
| d8-toluene (Surrogate) | % | - | - | - | 96 | - |
| Bromofluorobenzene (Surrogate) | % | - | - | - | 100 | - |
| Totals | | | | | | |
| | | | | | <1.5 | |
| Total Xylenes | µg/L | 1.5 | - | - | <3 | - |
| Total BTEX | µg/L | 3 | - | - | <3 | - |
| va 1.125. C. L. C. L. Strand VI. Strand March 1. Strader March 1. | 1. ANIA39/AKKA93 | | | | | |
| Volatile Petroleum Hydrocarbons in Water Method | I: AN433/AN434 | \$ | | | | |
| TRH C6-C9 | µg/L | 40 | - | - | 99 | - |
| | | | | | | |
| Surrogates | | | | | | |
| Trifluorotoluene (Surrogate) | % | - | - | - | 96 | - |
| Dibromofluoromethane (Surrogate) | % | - | - | - | - | - |
| d4-1,2-dichloroethane (Surrogate) | % | - | - | - | - | • |
| d8-toluene (Surrogate) | % | - | - | - | - | - |
| Bromofluorobenzene (Surrogale) | % | - | - | - | - | - |
| | | | | | | |
| TRH (Total Recoverable Hydrocarbons) in Water | Vethod: AN403 | | | | | |
| TRH C10-C14 | µg/L | 100 | - | - | <100 | - |
| TRH C15-C28 | µg/L | 200 | - | - | <200 | - |
| TRH C29-C40 | µg/L | 400 | - | - | <400 | - |
| | | | | | | |
| Surrogates | | | | | | |
| TRH (Surrogate) | % | - | - | - | - | - |
| | | | | | | |
| PAH (Polynuclear Aromatic Hydrocarbons) in Water | Method: AN | 420 | | | | |
| | | 0.1 | | - | <0.1 | - |
| Naphthalene | μg/L μg/L | 0.1 | - | - | <0.1 | - |
| 2-methylnaphthalene | μg/L | 0.1 | _ | - | <0.1 | - |
| 1-melhyinaphthalene | րց/Ը | 0.1 | _ | | <0.1 | - |
| | μg/L | 0.1 | _ | - | <0.1 | - |
| Acenaphlhene | μg/L | 0.1 | _ | - | <0.1 | - |
| Fluorene | μg/L | 0.1 | | - | <0.1 | - |
| Phenanthrene Anthracene | μg/L | 0.1 | _ | - | <0.1 | - |
| Fluoranthene | μg/L | 0.1 | - | - | <0.1 | - |
| Pyrene | μg/L | 0.1 | - | - | <0.1 | - |
| | μg/L | 0.1 | - | - | <0.1 | - |
| Benzo(a)anthracene Chrysene | μg/L | 0.1 | | - | <0.1 | - |
| Benzo(b)fluoranihene | μg/L | 0.1 | - | - | <0.1 | - |
| Benzo(k)fluoranthene | μg/L | 0.1 | - | - | <0.1 | - |
| Benzo(a)pyrene | μg/L | 0.1 | - | - | <0.1 | - |
| Indeno(1,2,3-cd)pyrene | բց/ե | 0.1 | - | | <0.1 | - |
| Dibenzo(a&h)anihracene | μg/L | 0.1 | - | - | <0.1 | - |
| Benzo(ghi)perylene | μg/L | 0.1 | - | | <0.1 | - |
| Total PAH (18) | µg/L | 1 | - | _ | <1 | - |
| | -8- | | | | | |



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ANALYTICAL REPORT

| | \$ 1 | nple Number Imple Matrix Sample Date Ample Name | SE105013.001 Soil 27 Jan 2012 BH101_0.1-0.2 | SE106013,002 Soil 27 Jan 2012 Duplicate D101 | SE105013:003 Water 27 Jan 2012 Rinsate R1 | SE106013.004 Soil 27 Jan 2012 Tripspike TS1 |
|--|-----------------|--|--|---|--|--|
| Parameter | Units | 11018 | | | | |
| PAH (Polynuclear Aromatic Hydrocarbons) in Water Surrogates | Method: AN | 1420 (contini | ued) | | | |
| d5-nitrobenzene (Surrogate) | % | - | - | - | 71 | - |
| 2-fluorobiphenyl (Surrogate) | % | - | - | - | 79 | - |
| d14-p-terphenyl (Surrogate) | % | - | - | - | 106 | - |
| Metals in Water (Dissolved) by ICPOES Method: A | N320/AN321 | | | | | |
| Arsenic, As | mg/L | 0.05 | - | - | <0.05 | - |
| Cadmium, Cd | mg/L | 0.005 | - | - | <0.005 | - |
| Chromium, Cr | mg/L | 0.005 | - | - | <0.005 | - |
| Copper, Cu | mg/L | 0.01 | - | - | <0.01 | - |
| Lead, Pb | mg/L | 0.02 | - | - | <0.02 | - |
| Nickel, Ni | mg/L | 0.01 | • | - | <0.01 | - |
| Zinc, Zn | mg/L | 0.01 | - | - | <0.01 | - |
| Mercury (dissolved) in Water Method: AN311/AN31 | 2 | | | | | |
| Mercury | mg/L | 0.0001 | - | - | <0.0001 | - |
| Moisture Content Method: AN234 | | | | | | |
| % Moisture | % | 0.5 | 22 | 14 | - | - |

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

Mercury (dissolved) in Water Method: ME-(AU)-[ENV]AN311/AN312

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|-----------|-----------------|-------|--------|---------|----------|------------------|-----------------|
| Mercury | LB013240 | mg/L | 0.0001 | <0.0001 | 0% | 115% | 109% |

Mercury in Soil Method: ME-(AU)-[ENV]AN312

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|-----------|-----------------|-------|------|-------|----------|------------------|-----------------|
| Mercury | LB013289 | mg/kg | 0.05 | <0.05 | 0% | 106% | 93% |

Metals in Water (Dissolved) by ICPOES Method: ME-(AU)-[ENV]AN320/AN321

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery |
|--------------|-----------------|-------|-------|--------|----------|------------------|
| Arsenic, As | LB013223 | mg/L | 0.05 | <0.05 | 0% | 96% |
| Cadmium, Cd | LB013223 | mg/L | 0.005 | <0.005 | 0% | 99% |
| Chromium, Cr | LB013223 | mg/L | 0.005 | <0.005 | 0% | 97% |
| Copper, Cu | LB013223 | mg/L | 0.01 | <0.01 | 0% | 97% |
| Lead, Pb | LB013223 | mg/L | 0.02 | <0.02 | 0% | 98% |
| Nickel, Ni | LB013223 | mg/L | 0.01 | <0.01 | 0% | 98% |
| Zinc, Zn | LB013223 | mg/L | 0.01 | <0.01 | 0% | 99% |

Moisture Content Method: ME-(AU)-[ENV]AN234

| Parameter | 0,0 | Units | LOR | DUP %RPD |
|------------|-----------|-------|-----|----------|
| | Reference | | | |
| % Moisture | LB013245 | % | 0.5 | 2 - 7% |

OC Pesticides In Soil Method: ME-(AU)-[ENV]AN400/AN420

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|-----------------|-------|------|-------|----------|------------------|-----------------|
| Hexachlorobenzene (HCB) | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha BHC | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Lindene | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Heplachlor | LB013151 | mg/kg | 0.1 | <0.1 | 0% | 120% | 75% |
| Aldrin | LB013151 | mg/kg | 0.1 | <0.1 | 0% | 130% | 75% |
| Beta BHC | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Delta BHC | LB013151 | mg/kg | 0.1 | <0.1 | 0% | 120% | 70% |
| Heptachlor epoxide | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| o,p'-DDE | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha Endosulfan | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Gamma Chlordane | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Alpha Chlordane | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| trans-Nonachlor | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| p,p'-DDE | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Dieldrin | LB013151 | mg/kg | 0.05 | <0.05 | 0% | 120% | 70% |
| Endrin | LB013151 | mg/kg | 0.2 | <0.2 | 0% | 120% | 80% |
| o,p'-DDD | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| o,p'-DDT | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Beta Endosulfan | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| p,p'-DDD | LB013151 | mg/kg | 0,1 | <0.1 | 0% | NA | NA |
| р.р'-DDT | LB013151 | mg/kg | 0.1 | <0.1 | 0% | 80% | 85% |
| Endosulían sulphale | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Endrin Aldehyde | LB013151 | mg/kg | 0,1 | <0.1 | 0% | NA | NA |
| Methoxychlor | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Endrin Kelone | LB013151 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Surrogates | | | | | | | |
| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
| Tetrachloro-m-xylene (TCMX) (Surrogate) | LB013151 | % | - | 125% | 0 - 15% | 95% | 73% |

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

PAH (Polynuclear Aromatic Hydrocarbons) in Soll Method: ME-(AU)-[ENV]AN420

| PAR (Polyhucieal Atomatic Hydrocarbolis) in 364 method. | QD | Units | LOR | MB | DUP %RPD | LCS | MS |
|---|-----------|-------|------|-------|-----------|-----------|-----------|
| Parameter | Reference | Unite | ITAK | NO DE | DOF MINED | %Recovery | %Recovery |
| Naphthalene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | 113% | 110% |
| 2-methylnaphthalene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| 1-methylnaphthalene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Acenaphthylene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | 114% | 113% |
| Acenaphthene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | 120% | 125% |
| Fluorene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Phenanthrene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 86% | 116% | 115% |
| Anthracene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | 123% | 122% |
| Fluoranthene | LB013154 | mg/kg | 0.1 | <0.1 | 46 - 52% | 120% | 113% |
| Pyrene | LB013154 | mg/kg | 0.1 | <0.1 | 43 - 57% | 124% | 104% |
| Benzo(a)anthracene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 43% | NA | NA |
| Chrysene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 31% | NA | NA |
| Benzo(b)fluoranthene | LB013154 | mg/kg | 0.1 | <0.1 | 24 - 26% | NA | NA |
| Benzo(k)fluoranthene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 40% | NA | NA |
| Benzo(a)pyrene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 27% | 119% | 116% |
| Indeno(1,2,3-cd)pyrene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 24% | NA | NA |
| Dibenzo(a&h)anthracene | LB013154 | mg/kg | 0.1 | <0.1 | 0% | NA | NA |
| Benzo(ghi)perviene | LB013154 | mg/kg | 0.1 | <0.1 | 0 - 27% | NA | NA |
| Total PAH | LB013154 | mg/kg | 0.8 | <0.8 | 0 - 41% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|------------------------------|-----------------|-------|-----|------|----------|------------------|-----------------|
| d5-nitrobenzene (Surrogate) | LB013154 | % | - | 95% | 1 - 4% | 98% | 126% |
| 2-fluorobiphenyi (Surrogale) | LB013154 | % | - | 109% | 2 - 3% | 111% | 109% |
| d14-p-terphenyl (Surrogale) | LB013154 | % | - | 115% | 0 - 6% | 114% | 118% |

PAH (Polynuclear Aromatic Hydrocarbons) in Water Method: ME-(AU)-[ENV]AN420

| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
|------------------------|-----------------|-------|-----|------|------------------|
| Naphthalene | LB013144 | µg/L | 0.1 | <0.1 | 91% |
| 2-methylnaphthalene | LB013144 | µg/L | 0.1 | <0.1 | NA |
| 1-methylnaphthalene | LB013144 | µg/L | 0.1 | <0.1 | NA |
| Acenaphthylene | LB013144 | µg/L | 0.1 | <0.1 | 103% |
| Acenaphthene | LB013144 | µg/L | 0.1 | <0.1 | 113% |
| Fluorene | LB013144 | µg/L | 0.1 | <0.1 | NA |
| Phenanthrene | LB013144 | µg/L | 0.1 | <0.1 | 121% |
| Anthracene | LB013144 | µg/L | 0.1 | <0.1 | 109% |
| Fluoranthene | LB013144 | µg/L | 0.1 | <0.1 | 119% |
| Pyrene | LB013144 | µg/L | 0.1 | <0.1 | 120% |
| Benzo(a)anthracene | LB013144 | µg/L | 0.1 | <0.1 | NA |
| Chrysene | LB013144 | μg/L | 0.1 | <0.1 | NA |
| Benzo(b)fluoranthene | LB013144 | µg/L | 0.1 | <0.1 | NA |
| Benzo(k)/luoranthene | LB013144 | μg/L | 0.1 | <0.1 | NA |
| Benzo(a)pyrene | LB013144 | µg/L | 0.1 | <0.1 | 118% |
| Indeno(1,2,3-cd)pyrene | LB013144 | μg/L | 0.1 | <0.1 | NA |
| Dibenzo(a&h)anthracene | LB013144 | hð\F | 0.1 | <0.1 | NA |
| Benzo(ghi)perylene | LB013144 | µg/L | 0,1 | <0.1 | NA |
| Total PAH (18) | LB013144 | µg/L | 1 | <1 | |

Surrogates

| Parameter | ଗ୍ରତ | Units | LOR | MB | LCS |
|------------------------------|-----------|-------|-----|------|-----------|
| | Reference | | | | %Recovery |
| d5-nitrobenzene (Surrogate) | LB013144 | % | - | 108% | 98% |
| 2-fluorobiphenyi (Surrogale) | LB013144 | % | - | 101% | 101% |
| d14-p-terphenyl (Surrogate) | LB013144 | % | - | 112% | 116% |

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

PCBs in Soli Method: ME-(AU)-[ENV]AN400/AN420

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|------------------------|-----------------|-------|-----|------|----------|------------------|-----------------|
| Arochlor 1016 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1221 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1232 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochior 1242 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1248 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1254 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1260 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | 129% | 78% |
| Arochlor 1262 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Arochlor 1268 | LB013151 | mg/kg | 0.2 | <0.2 | 0% | NA | NA |
| Total PCBs (Arochlors) | LB013151 | mg/kg | 1 | <1 | 0% | NA | NA |

Surrogates

| Parameter | QC Reference | Units | LOR | МВ | DUP %RPD | LCS %Recovery | MS %Recovery |
|---|-----------------|-------|-----|------|----------|------------------|-----------------|
| Tetrachloro-m-xylene (TCMX) (Surrogale) | LB013151 | % | • | 125% | 0 - 15% | 72% | 73% |

Total Cyanide in soil by Discrete Analyser (Aquakern) Method: ME-(AU)-[ENV]AN077/AN287

| Parameter | ପ୍ରତ | Units | LOR | MB | LCS | MSD %RPD |
|---------------|-----------|-------|-----|------|-----------|----------|
| | Reference | P.6 | | | %Recovery | |
| Total Cyanide | LB013182 | mg/kg | 0.1 | <0.1 | 97% | NA |

Total Phenolics in Soil Method: ME-(AU)-[ENV]AN289

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MSD %RPD |
|---------------|-----------------|-------|-----|------|----------|------------------|----------|
| Total Phenols | LB013123 | mg/kg | 0.1 | <0.1 | 18% | 90% | NA |

Total Recoverable Metals in Soil by ICPOES from EPA 200.8 Digest Method: ME-(AU)-[ENV]AN040/AN320

| Parameter | QC Reference | Units | LOR | MB | DUP %RPD | LCS %Recovery | MS %Recovery |
|--------------|-----------------|-------|-----|------|----------|------------------|-----------------|
| Arsenic, As | LB013286 | mg/kg | 3 | <3 | 0 - 12% | 98% | 72% |
| Cadmium, Cd | LB013286 | mg/kg | 0.3 | <0.3 | 0% | 103% | 81% |
| Chromium, Cr | LB013286 | mg/kg | 0.3 | <0.3 | 0 - 1% | 100% | 75% |
| Copper, Cu | LB013286 | mg/kg | 0.5 | <0.5 | 1 - 12% | 102% | 81% |
| Lead, Pb | LB013286 | mg/kg | 1 | <1 | 6 - 9% | 102% | 69% |
| Nickel, Ni | LB013286 | mg/kg | 0.5 | <0.5 | 0 - 7% | 102% | 79% |
| Zinc, Zn | LB013286 | mg/kg | 0.5 | <0.5 | 3 - 4% | 102% | 78% |

TRH (Total Recoverable Hydrocarbons) in Soil Method: ME-(AU)-[ENV]AN403

| Parameter | QC Reference | Units | LOR | МВ | LCS %Recovery |
|-------------|-----------------|-------|-----|------|------------------|
| TRH C10-C14 | LB013149 | mg/kg | 20 | <20 | 103% |
| TRH C15-C28 | LB013149 | mg/kg | 50 | <50 | 98% |
| TRH C29-C40 | LB013149 | mg/kg | 150 | <150 | NA |

TRH (Total Recoverable Hydrocarbons) in Water Method: ME-(AU)-[ENV]AN403

| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
|-------------|-----------------|-------|-----|------|------------------|
| TRH C10-C14 | LB013144 | µg/L | 100 | <100 | 93% |
| TRH C15-C28 | LB013144 | µg/L | 200 | <200 | 94% |
| TRH C29-C40 | LB013144 | µg/L | 400 | <400 | NA |

MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

VOC's in Soil Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons

| Parameter | (D)9) | Units | (L(0)R) | MB | LCS |
|--------------|-----------|-------|---------|------|-----------|
| | Reference | | | | %Recovery |
| Benzene | LB013141 | mg/kg | 0.1 | <0.1 | 90% |
| Toluene | LB013141 | mg/kg | 0.1 | <0.1 | 90% |
| Ethylbenzene | LB013141 | mg/kg | 0.1 | <0.1 | 90% |
| m/p-xylene | LB013141 | mg/kg | 0.2 | <0.2 | 92% |
| o-xylene | LB013141 | mg/kg | 0.1 | <0.1 | 96% |

Oxygenated Compounds

| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
|--------------------------------|-----------------|-------|-----|------|------------------|
| MIBE (Methyl-tert-butyl ether) | LB013141 | mg/kg | 0.1 | <0.1 | NA |

| Surrogales | | | | | |
|-----------------------------------|-----------------|-------|-----|------|------------------|
| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
| Dibromofluoromethane (Surrogate) | LB013141 | % | - | 103% | 102% |
| d4-1,2-dichloroethane (Surrogale) | LB013141 | % | - | 106% | 103% |
| d8-toluene (Surrogate) | LB013141 | % | - | 101% | 101% |
| Bromofluorobenzene (Surrogate) | LB013141 | % | - | 96% | 108% |

| Totals | | | | | | |
|----------------|--|-----------|-------|-----|------|------------------|
| Parameter | | QC | Units | LOR | MB | LCS %Recovery |
| | and the second | Reference | | | | %Recovery |
| Total Xylenes* | | LB013141 | mg/kg | 0.3 | <0.3 | NA |
| Total BTEX* | | LB013141 | mg/kg | - | 0 | NA |

VOCs in Water Method: ME-(AU)-[ENV]AN433/AN434

Monocyclic Aromatic Hydrocarbons

| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
|--------------|-----------------|-------|-----|------|------------------|
| Benzene | LB013388 | µg/L | 0.5 | <0.5 | 98% |
| Toluene | LB013388 | µg/L | 0.5 | <0.5 | 93% |
| Ethylbenzene | LB013388 | µg/L | 0.5 | <0.5 | 93% |
| m/p-xylene | LB013388 | µg/L | 1 | <1 | 89% |
| o-xylene | LB013388 | μg/L | 0.5 | <0.5 | 97% |

| Oxygenated Compounds | | | | | |
|--------------------------------|-----------------|-------|-----|------|------------------|
| Parameter | QC Reference | Units | LOR | MB | LCS %Recovery |
| MIBE (Methyl-tert-butyl ether) | LB013388 | µg/L | 0.5 | <0.5 | NA |

Surrogates

| Parameter | QC | Units | LOR | MB | LCS |
|-----------------------------------|-----------|-------|-----|-----|-----------|
| | Reference | | | | %Recovery |
| Dibromofluoromethane (Surrogate) | LB013388 | % | - | 96% | 99% |
| d4-1,2-dichloroethane (Surrogate) | LB013388 | % | - | 93% | 101% |
| d8-toluene (Surrogate) | LB013388 | % | - | 98% | 99% |
| Bromofluorobenzene (Surrogate) | LB013388 | % | - | 83% | 111% |



MB blank results are compared to the Limit of Reporting

LCS and MS spike recoveries are measured as the percentage of analyte recovered from the sample compared the the amount of analyte spiked into the sample. DUP and MSD relative percent differences are measured against their original counterpart samples according to the formula: the absolute difference of the two results divided by the average of the two results as a percentage. Where the DUP RPD is 'NA', the results are less than the LOR and thus the RPD is not applicable.

Volatile Petroleum Hydrocarbons in Soil - Method: ME-(AU)-[ENV]AN433/AN434

| Parameter | QC Réference | Units | LOR | MB | LGS %Recovery |
|-----------|-----------------|-------|-----|-----|------------------|
| TRH C6-C9 | LB013141 | mg/kg | 20 | <20 | 111% |

Surrogates

| Parameter | ର୍ଷ | Units | LOR | MB | LCS |
|------------------------------|-----------|-------|-----|------|-----------|
| | Reference | | | | %Recovery |
| Trifluorotoluene (Surrogate) | LB013141 | % | - | 101% | 90% |

Volatile Petroleum Hydrocarbons in Water Method: ME-(AU)-[ENV]AN433/AN434

| Parameter | QC Reference | Unite | LOR | MB | LCS %Recovery |
|-----------|-----------------|-------|-----|-----|------------------|
| TRH C6-C9 | LB013388 | μg/L | 40 | <40 | 102% |

| Surrogates | | | | | |
|------------------------------|-----------|-------|-----|------------|-----------|
| Parameter | QC | Units | LOR | MB | LCS |
| | Reference | | | a de la se | %Recovery |
| Trifluorotoluene (Surrogate) | LB013388 | % | - | 98% | 71% |



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METHOD SUMMARY

| METHOD | METHODOLOGY SUMMARY |
|-------------|---|
| N020 | Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B. |
| N040 | A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analsysis by ASS or ICP as per USEPA Method 200.8. |
| N083 | Separatory funnels are used for aqueous samples and extracted by transferring an appropriate volume (mass) of liquid into a separatory funnel and adding 3 serial aliquots of dichloromethane. Samples receive a single extraction at pH 7 to recover base / neutral analytes and two extractions at pH < 2 to recover acidic analytes. QC samples are prepared by spiking organic free water with target analytes and extracting as per samples. |
| N088 | Orbital rolling for Organic pollutants are extracted from soil/sediment by transferring an appropriate mass of sample to a clear soil jar and extracting with 1:1 Dichloromethane/Acetone. Orbital Rolling method is intended for the extraction of semi-volatile organic compounds from soil/sediment samples, and is based somewhat on USEPA method 3570 (Micro Organic extraction and sample preparation). Method 3700. |
| N234 | The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water. |
| N311/AN312 | Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500. |
| N312 | Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500 |
| N320/AN321 | Metals by ICP-OES: Samples are preserved with 10% nitric acid for a wide range of metals and some non-metals. This solution is measured by Inductively Coupled Plasma. Solutions are aspirated into an argon plasma at 8000-10000K and emit characteristic energy or light as a result of electron transitions through unique energy levels. The emitted light is focused onto a diffraction grating where it is separated into components. |
| AN320/AN321 | Photomultipliers or CCDs are used to measure the light intensity at specific wavelengths. This intensity is directly proportional to concentration. Corrections are required to compensate for spectral overlap between elements. Reference APHA 3120 B. |
| N400 | OC and OP Pesticides by GC-ECD: The determination of organochlorine (OC) and organophosphorus (OP) pesticides and polychlorinated biphenyls (PCBs) in soils, sludges and groundwater. (Based on USEPA methods 3510, 3550, 8140 and 8080.) |
| AN403 | Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36. |
| AN403 | Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Petroleum Hydrocarbons (TPH) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with diffential polarity of the elluent solvents. |



METHOD SUMMARY

| METHOD VETHOD/CORPORATION ANK03 The GC/FD method is a web stated to the analysis of refined high boiling point materials (is lubicating oils of greases) but is particularly suited to the manufactors lipide, minute the provide and loader analysis occurring information lipide, minute the provide of the state of point of vehilling is laken. The manufactor lipide, minute the provide of the state of point of vehilling is laken. The state of the state of point of vehilling is laken. The state of the state of point of the state of | | | | | | | |
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| preases) but is particularly satisfied for measuring diseat, knowner and peerfor forme to control validity is taken. This immethods will devel number is control validity is taken. This immethods will devel number is control validity is taken. This immethods will devel number is control validity. Reference USEPA 35108, 80158. AN420 (SVOCa) Including OC, OP, PCB, Herbindes, PAH, Phihalates and Specialed Phanols (edd) in sols, sediments uses and eleminined by OCMOSECD technique following appropriate advent soft action process (Based on USEPA 35002 and 62700). AN420 SVOC Compound: Semi-Validite Organic Compounds (SVOCa) including OC, OP, PCB, Herbindles, PAH, Phithalates and Specialed Phanols (edd) in sols, sediments and waters are determined by OCMOSECD technique biolowing appropriate advent software formed to process (Based on OCCA) SVOC Compounds: Semi-Validite Organic Compounds (SVOCa) including OC, OP, PCB, Herbindles, PAH, Phithalates and Specialed Phanols, eddiments and valides are datermined by GCMMECD technique biolowing appropriate advent starked brondes (SVOCa) including OC, OP, PCB, Herbindles, PAH, Phithalates and Specialed Phanols, eddiments and valides and adventional on the set of the set o | | | | | the enclosis of a fine d bisk bottom | a point materials (is lubricating ails or | |
| IN420 SVCC Compounds: Sami-Valiatile Organic Compounds (SVCCQ) including OC. OP, PCG, MAYECD technique following appropriate solvent existence of the solution and solution of the solution of t | AN4 | 03 | greases) but is particularly suit method will detect naturally oc sufficient levels, dependant on | ed for me | easuring diesel, kerosene and petro vdrocarbons, lipids, animal fats, ph | ol if care to control volatility is taken. This enols and PAHs if they are present at | |
| Phihales and Speciale Phenols in solls, sediments and waters are determined by GCMSIECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270). AN433/AN434 VOCs and C6-C6 Hydrocarbors by GC-MS PGT: VOC's are volaile organic compounds. The sample is presented to a gas chromelograph via a puge and trap (PGT) concentrator and autosmpter and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whitel Hydro samples are processed directly. References: USEPA 60308, 8020A, 8260. FOOTNOTES | AN4 | 20 | and waters are determined by | CB, Herb GCMS/E | icides, PAH, Phthalates and Speci CD technique following appropriate | ated Phenols (etc) in soils, sediments e solvent extraction process (Based on | |
| FOOTNOTES IS Insufficient sample for analysis. GE GFH QC result is above the upper folerance UNR Sample samples are initially extracted with methanol whilst liquid samples are processed directly. References. USEPA 5030B, 6020A, 6260. FOOTNOTES | AN4 | 20 | Phthalates and Speciated Phe | enols in s | oils, sediments and waters are dete | ermined by GCMS/ECD technique | |
| IS Insufficient sample for analysis. QFH QC result is above the upper tolerance LNR Sample listed, but not received. QFL QC result is below the lower tolerance • This analysis is not covered by the scope of accreditation. QFL QC result is below the lower tolerance • Performed by outside laboratory. NL Not Validated NCR Entit of Reporting NL Not Validated Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at thtp://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Ary other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction fore exercising all their rights and obligations under the transaction documents. | AN4 | 33/AN434 | to a gas chromatograph via a Spectrometer (MSD). Solid sa | purge an amples a | d trap (P&T) concentrator and auto re initially extracted with methanol | sampler and is detected with a Mass | |
| IS Insufficient sample for analysis. QFH QC result is above the upper tolerance LNR Sample listed, but not received. QFL QC result is below the lower tolerance • This analysis is not covered by the scope of accreditation. QFL QC result is below the lower tolerance • Performed by outside laboratory. NL Not Validated NCR Entit of Reporting NL Not Validated Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at thtp://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Ary other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction fore exercising all their rights and obligations under the transaction documents. | | | | | | | |
| IS Insufficient sample for analysis. QFH QC result is above the upper tolerance LNR Sample listed, but not received. QFL QC result is below the lower tolerance • This analysis is not covered by the scope of accreditation. QFL QC result is below the lower tolerance • Performed by outside laboratory. NL Not Validated NCR Entit of Reporting NL Not Validated Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at thtp://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Ary other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction fore exercising all their rights and obligations under the transaction documents. | FOC | NUNTES | | | | | |
| LNR Sample listed, but not received. QFL QC result is below the lower tolerance • This analysis is not covered by the scope of accreditation. NVL Not Validated • Performed by outside laboratory. NVL Not Validated LOR Limit of Reporting NVL Not Validated 11 Raised or Lowered Limit of Reporting NVL Not Validated Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-en-vqu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/lerms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | FUC | | | | | | |
| This analysis is not covered by the scope of accreditation. Performed by outside laboratory. LOR Limit of Reporting 1. Raised or Lowered Limit of Reporting Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/letrms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a tarensection from exercising all their rights and obligations under the transaction documents. | IS | | | | | | |
| accreditation. NVL Not Validated A Performed by outside laboratory. LOR Limit of Reporting 1 Raised or Lowered Limit of Reporting Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation or liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a tansaction from exercising all their rights and obligations under the transaction documents. | | • • | | QFL | | | |
| LOR Limit of Reporting 11 Raised or Lowered Limit of Reporting Samples analysed as received. Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | • | • | by the scope of | NVL | | | |
| Solid samples expressed on a dry weight basis. Some totals may not appear to add up because the total is rounded after adding up the raw values. The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | LOR | Limit of Reporting | - | | | | |
| The QC criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | | | eight basis. | | | | |
| http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf This document is issued, on the Client's behalf, by the Company under its General Conditions of Service available on request and accessible at http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | Som | e totals may not appear to add | up because the total is rounded | after add | ing up the raw values. | | |
| http://www.sgs.com/terms_and_conditions.htm. The Client's attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any other holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | The (http:/ | QC criteria are subject to intern //www.au.sgs.com/sgs-mp-au-e | al review according to the SGS (nv-qu-022-qa-qc-plan-en-09.pdf | QAQC pl f | an and may be provided on reques | t or alternatively can be found here: | |
| and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. | http:/ | //www.sgs.com/terms_and_con | e Client's behalf, by the Co ditions.htm. The Client's att | mpany (tention | under its General Conditions o is drawn to the limitation of | f Service available on request and accessible a f liability, indemnification and jurisdiction issue | at #S |
| This report must not be reproduced, except in full. | and | within the limits of Client's | nstructions, if any. The Comp | pany's s | ole responsibility is to its Client | any's findings at the time of its intervention onl and this document does not exonerate parties t | у .о |
| | This | report must not be reproduced, | except in full. | | | | |
| | | | | | | | |



STATEMENT OF QA/QC PERFORMANCE

| CLIENT DETAILS | | | LABORATORY DETAIL | .S | |
|--|---|---|---|---|-------------|
| ontact | John Xu | | Manager | Huong Crawford | |
| ient | Geotechnique | | Laboratory | SGS Alexandria Envir | onmental |
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| mail | john.xu@geotech.com.au | | Email | au.environmental.syd | ney@sgs.com |
| roject | 12593/2 - Mona Vale | | SGS Reference | SE105013 R0 | |
| rder Number | (Not specified) | | Report Number | 0000017501 | |
| amples | 4 | | Date Reported | 07 Feb 2012 | |
| ata Quality O ne data relatin nis QA/QC St | ry data for each environmer bjectives (DQO). Comments ng to sampling was taken fro atement must be read in co and the Analytical Report m | arising from the comparis om the Chain of Custody d njunction with the referenc | on were made and are n ocument and was suppli ed Analytical Report. | eported below. | |
| Data Quality | y Objectives were met with t | he exception of the followi | ng: | | |
| Matrix Spike | Total Recove | erable Metals in Soil by ICPOES fro | m EPA 200.8 Digest | | 1 item |
| | | | | | |
| | | | | | |
| | IARY | | Type of documentation | | COC |
| SAMPLE SUMM | | 3 Soils, 1 Water | | rocolived | LTR. |

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HOLDING TIME SUMMARY

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
|--|--|--------------------|------------------------|-------------------------|-------------------------------|--------------------------|--|-----------------------------------|
| sinsate R1 | SE105013.003 | LB013240 | 27 Jan 2012 | 27 Jan 2012 | 24 Feb 2012 | 01 Feb 2012 | 24 Feb 2012 | 02 Feb 2012 |
| ercury in Soll | | | | | | | Method: ¹ | ME-(AU)-[ENV]AN |
| ample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013289 | 27 Jan 2012 | 27 Jan 2012 | 24 Feb 2012 | 02 Feb 2012 | 24 Feb 2012 | 02 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013289 | 27 Jan 2012 | 27 Jan 2012 | 24 Feb 2012 | 02 Feb 2012 | 24 Feb 2012 | 02 Feb 2012 |
| letals in Water (Dissolved) | | | | | | | Method: ME-(AU | I)-[ENV]AN320/AN |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| Rinsate R1 | SE105013.003 | LB013223 | 27 Jan 2012 | 27 Jan 2012 | 25 Jul 2012 | 01 Feb 2012 | 25 Jul 2012 | 01 Feb 2012 |
| Iolsture Content | | | | | | | Method: | ME-(AU)-[ENV]AI |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013245 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 01 Feb 2012 | 06 Feb 2012 | 02 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013245 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 01 Feb 2012 | 06 Feb 2012 | 02 Feb 2012 |
| C Pesticides in Soll | | | | | | | Method: ME-(AL | J)-[ENV]AN400/A |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013151 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013151 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| AH (Polynuclear Aromatic | Hydrocarbons) in Soil | | | | | | | ME-(AU)-[ENV]A |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013154 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013154 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| AH (Polynuclear Aromatic | Hydrocarbons) in Water | | | · | | | | ME-(AU)-[ENV]A |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| Rinsate R1 | SE105013.003 | LB013144 | 27 Jan 2012 | 27 Jan 2012 | 03 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| PCBs in Soil | | | | | | | Method: ME-(Al | U)-[ENV]AN400/A |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013151 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013151 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 03 Feb 2012 |
| fotal Cyanide in soil by Dis | crete Analyser (Aquakem) |) | | | | | Method: ME-(Al | U}-[ENV]AN077// |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013182 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 10 Feb 2012 | 01 Feb 201 |
| Duplicate D101 | SE105013.002 | LB013182 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 10 Feb 2012 | 01 Feb 201 |
| Total Phenolics in Soll | | | | | | | Method: | ME-(AU)-[ENV] |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analyse |
| BH101_0.1-0.2 | SE105013.001 | LB013123 | 27 Jan 2012 | 27 Jan 2012 | 24 Feb 2012 | 31 Jan 2012 | 24 Feb 2012 | 31 Jan 201 |
| Duplicate D101 | SE105013.002 | LB013123 | 27 Jan 2012 | 27 Jan 2012 | 24 Feb 2012 | 31 Jan 2012 | 24 Feb 2012 | 31 Jan 201 |
| Total Recoverable Metals in | | PA 200.8 Digest | | | | | Method: ME-(A | U)-[ENV]AN040/ |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analyse |
| AND AS THE CALL HALF AND A COLOR FOR THE ADDRESS OF | SE105013.001 | LB013286 | 27 Jan 2012 | 27 Jan 2012 | 25 Jul 2012 | 02 Feb 2012 | 25 Jul 2012 | 03 Feb 201 |
| BH101_0.1-0.2 | | | | 27 Jan 2012 | 25 Jul 2012 | 02 Feb 2012 | 25 Jul 2012 | 03 Feb 201 |
| | SE105013.002 | LB013286 | 27 Jan 2012 | 27 0011 2012 | | | | |
| BH101_0.1-0.2 Duplicate D101 | | LB013286 | 21 Jan 2012 | | | | Method. | : ME-(AU)-[ENV] |
| BH101_0.1-0.2 Duplicate D101 TRH (Total Recoverable Hy | ydrocarbons) in Soll | | | | Extraction Due | Extracted | Method: Analysis Due | ME-(AU)-[ENV] Analyse |
| BH101_0.1-0.2 Duplicate D101 TRH (Total Recoverable H) Sample Name | ydrocarbons) in Soil Sample No. | QC Ref | Sampled | Received | Extraction Due 10 Feb 2012 | Extracted 31 Jan 2012 | | |
| BH101_0.1-0.2 Duplicate D101 TRH (Total Recoverable Hy Sample Name BH101_0.1-0.2 | ydrocarbons) in Soll Sample No. SE105013.001 | | | | | | Analysis Due | Analyse 03 Feb 20 |
| BH101_0.1-0.2 Duplicate D101 TRH (Total Recoverable Hy Sample Name BH101_0.1-0.2 Duplicate D101 | ydrocarbons) in Soil Sample No. SE105013.001 SE105013.002 | QC Ref LB013149 | Sampled 27 Jan 2012 | Received 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | Analysis Due 11 Mar 2012 11 Mar 2012 | Analyse 03 Feb 20 03 Feb 20 |
| BH101_0.1-0.2 Duplicate D101 TRH (Total Recoverable Hy Sample Name BH101_0.1-0.2 | ydrocarbons) in Soil Sample No. SE105013.001 SE105013.002 | QC Ref LB013149 | Sampled 27 Jan 2012 | Received 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | Analysis Due 11 Mar 2012 11 Mar 2012 | Analyse 03 Feb 20 |

VOC's in Solf



HOLDING TIME SUMMARY

SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

Extraction and analysis holding time due dates listed are calculated from the date sampled, although holding times may be extended after laboratory extraction for some analytes. The due dates are the suggested dates that samples may be held before extraction or analysis and still be considered valid.

Extraction and analysis dates are shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria. If the sampled date is not supplied then compliance with criteria cannot be determined. If the received date is after one or both due dates then holding time will fail by default.

| VOC's in Soil (continued) | f. | | | | | | Method: ME-(At | J)-{ENV]AN433/AN434 |
|---------------------------|------------------|----------|-------------|-------------|----------------|-------------|----------------|---------------------|
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| Tripspike TS1 | SE105013.004 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| VOCs in Water | | | | | | | Method: ME-(At | U)-[ENV]AN433/AN434 |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| Rinsate R1 | SE105013.003 | LB013388 | 27 Jan 2012 | 27 Jan 2012 | 03 Feb 2012 | 03 Feb 2012 | 14 Mar 2012 | 03 Feb 2012 |
| Volatile Petroleum Hydrod | carbons in Soli | | | | | | Method: ME-{A | U)-[ENVJAN433/AN434 |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| BH101_0.1-0.2 | SE105013.001 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| Duplicate D101 | SE105013.002 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| Tripspike TS1 | SE105013.004 | LB013141 | 27 Jan 2012 | 27 Jan 2012 | 10 Feb 2012 | 31 Jan 2012 | 11 Mar 2012 | 07 Feb 2012 |
| Volatile Petroleum Hydrod | carbons in Water | | | | | | Method: ME-(Ai | U)-[ENV]AN433/AN434 |
| Sample Name | Sample No. | QC Ref | Sampled | Received | Extraction Due | Extracted | Analysis Due | Analysed |
| Rinsate R1 | SE105013.003 | LB013388 | 27 Jan 2012 | 27 Jan 2012 | 03 Feb 2012 | 03 Feb 2012 | 14 Mar 2012 | 03 Feb 2012 |



SURROGATES

Surrogate results are evaluated against upper and lower limit criteria established in the SGS QA/QC plan (Ref: MP-(AU)-[ENV]QU-022). At least two of three routine level soil sample surrogate spike recoveries for BTEX/VOC are to be within 70-130% where control charts have not been developed and within the established control limits for charted surrogates. Matrix effects may void this as an acceptance criterion. Water sample surrogate spike recoveries are to be within 40-130%. The presence of emulsions, surfactants and particulates may void this as an acceptance criterion.

Result is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| ļ | | | | | | |
|--|--|--|--|---|--|---|
| } | OC Pesticides In Soli | | | | Method: ME-(AU)-(EN | VJAN400/AN420 |
| | Parameter | Sample Name | Sample Number | Unite | Criteria | Recovery % |
| | Tetrachloro-m-xylene (TCMX) (Surrogate) | BH101_0.1-0.2 | SE105013.001 | % | 60 - 130% | 128 |
| | • • • • • • | Duplicate D101 | SE105013.002 | % | 60 - 130% | 128 |
| | many market and the state of th | | | | Mathad ME.G | AU)-[ENV]AN420 |
| | FAH (Polynuclear Aromatic Hydrocarbons) in Soli | | | Units | | Recovery % |
| 5 | Parameter | Sample Name | Sample Number | | 60 - 130% | 99 |
| | 2-fluorobiphenyl (Surrogate) | BH101_0.1-0.2 | SE105013.001 SE105013.002 | % | 60 - 130% 60 - 130% | 110 |
| | | Duplicate D101 BH101_0.1-0.2 | SE105013.002 SE105013.001 | % | 60 - 130% | 104 |
| | d14-p-terphenyl (Surrogate) | Duplicate D101 | SE105013.002 | % | 60 - 130% | 110 |
| 9 | dE siteshaanse (Ourseets) | BH101_0.1-0.2 | SE105013.001 | % | 60 - 130% | 87 |
| Contraction of the local distribution of the | d5-nitrobenzene (Surrogate) | Duplicate D101 | SE105013.002 | % | 60 - 130% | 101 |
| | | Daphogto Direi | | | | AU)-[ENV]AN420 |
| | PAH (Polynuclear Aromatic Hydrocarbons) in Water | | | Units | Criteria | |
| 2 | Parameter | Sample Name | Sample Number | | 40 - 130% | Recovery % 79 |
| | 2-fluorobiphenyl (Surrogate) | Rinsate R1 | SE105013.003 SE105013.003 | % % | 40 - 130% | 106 |
| | d14-p-terphenyl (Surrogate) | Rinsale R1 | SE105013.003 | % | 40 - 130% | 71 |
| * | d5-nitrobenzene (Surrogate) | Rinsate R1 | 3E105015.005 | 76 | | |
| 1 | PCBs in Soil | | | | Method: ME-(AU)-[Ef | |
| | Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
| | Tetrachloro-m-xylene (TCMX) (Surrogate) | BH101_0.1-0.2 | SE105013.001 | % | 60 - 130% | 128 |
| | | Duplicate D101 | SE105013.002 | % | 60 - 130% | 128 |
| | VOC's in Solt | | | | Method: ME-(AU)-[EI | NVJAN433/AN434 |
| - | Parameter | Sample Name | Sample Number | Units | Criteria | Recovery % |
| ٤ | | | | | | 105 |
| | Bromofluorobenzene (Surrogate) | BH101_0.1-0.2 | SE105013.001 | % | 60 - 130% | 105 |
| | Bromofluorobenzene (Surrogate) | BH101_0.1-0.2 Duplicate D101 | SE105013.001 SE105013.002 | % % | 60 - 130% 60 - 130% | 105 106 |
| | Bromofluorobenzene (Surrogate) | | | | | |
| | Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) | Duplicate D101 | SE105013.002 | % | 60 - 130% | 106 |
| in the second second | | Duplicate D101 Tripspike TS1 | SE105013.002 SE105013.004 | % | 60 - 130% 60 - 130% | 106 119 |
| and the second second | | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 | SE105013.002 SE105013.004 SE105013.001 | % % | 60 - 130% 60 - 130% 60 - 130% | 106 119 101 97 95 |
| function for the second second | | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 | % % % % | 60 - 130% 60 - 130% 60 - 130% 60 - 130% 60 - 130% 60 - 130% | 106 119 101 97 95 104 |
| manual manual fraction | d4-1,2-dichloroethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 | % % % % % | 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 |
| antices provide antices and | d4-1,2-dichloroethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 | % % % % % | 60 - 130% 60 - 130% | 106 119 97 95 104 102 99 |
| Material Construction (Material Construction) | d4-1,2-dichloroethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 | % % % % % % | 60 - 130% 60 - 130% | 106 119 97 95 104 102 99 100 |
| normal for an and a second sec | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 | % % % % % % | 60 - 130% 60 - 130% | 106 119 97 95 104 102 99 100 95 |
| anime "alterioranimatication" "analiteteranimatication" (anime | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 | % % % % % % | 60 - 130% 60 - 130% | 106 119 97 95 104 102 99 100 95 98 |
| normal for an and the second second for a second | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 | % % % % % % | 60 - 130% 60 - 130% Method: ME-(AU)-{E | 106 119 101 97 95 104 102 99 100 95 98 88 |
| animal hardeness and the second s | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 | % % % % % % % % | 60 - 130% 60 - 130% Method: ME (AU)-{E | 106 119 101 97 95 104 102 99 100 95 98 88 NVJAN433/AN434 Recovery % |
| landarana l | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.004 SE105013.004 SE105013.001 SE105013.004 SE105013.004 | % % % % % % % Units % | 60 - 130% 60 - 130% Method: ME-(AU)-[E Criteria 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 88 NVJAN433/AN434 Recovery % 100 |
| anande and and an and an and an an and an an an and an | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.004 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.003 SE105013.003 | % % % % % % % % Units % | 60 - 130% 60 - 130% Method: ME-(AU)-{E Criteria 60 - 130% 40 - 130% | 106 119 101 97 95 104 102 99 100 95 98 88 NVJAN433/AN434 Recovery % 100 99 |
| antipation (antipation) (anti | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | 60 - 130% 60 - 130% Method: ME+(AU)-{E Criteria 60 - 130% 40 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 88 ₩VJAN433/AN434 Recovery % 100 99 96 |
| landerstanding landerstanding landerstanding landerstanding landerstanding landerstanding landerstanding lander | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.004 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.003 SE105013.003 | % % % % % % % % Units % | 60 - 130% 60 - 130% Method: ME-(AU)-{E Criteria 60 - 130% 40 - 130% 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 100 95 98 NVJAN433/AN434 Recovery % 100 99 99 96 |
| laugumenteer ^{ee} 'second teaceere 'allocation 'allocation' 'allocation' 'allocation' 'allocation' | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | 60 - 130% 60 - 130% Method: ME+(AU)-{E Criteria 60 - 130% 40 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 100 95 98 NVJAN433/AN434 Recovery % 100 99 99 96 |
| urinee humanaanaanaa humanaanaa humanaanaa humanaanaanaa humanaanaanaanaa humanaanaanaanaa humanaanaanaa humana | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ \$ | 60 - 130% 60 - 130% Method: ME-(AU)-{E Criteria 60 - 130% 40 - 130% 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 100 95 98 NVJAN433/AN434 Recovery % 100 99 99 96 |
| and a second the second the second to the | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) Votatile Petroleum Hydrocarbons in Solt | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.004 SE105013.004 SE105013.004 SE105013.004 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % Units % % % | 60 - 130% 60 - 130% Method: ME (AU)-(E Criteria 60 - 130% | 106 119 101 97 95 104 102 99 100 95 98 88 NVJAN433/AN434 Recovery % 96 96 |
| lanearangenerited hangenerited hereited between the conservation of the conservation of the conservation of the | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-1,2-dichloroethane (Surrogate) Dibromofluoromethane (Surrogate) Dibromofluoromethane (Surrogate) Votatile Petroleum Hydrocarbons in Solt Parameter | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.004 SE105013.004 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % % % % % % % | 60 - 130% 60 - 130% Method: ME (AU)-{E Criteria | 106 119 101 97 95 104 102 99 100 95 88 NVJAN433/AN434 Recovery % 100 99 96 96 |
| international contractions international | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-toluene (Surrogate) Dibromofluoromethane (Surrogate) Dibromofluoromethane (Surrogate) Votatile Petroleum Hydrocarbons in Soit Parameter Trifluorotoluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.004 SE105013.002 SE105013.004 SE105013.004 SE105013.004 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % \$ % % % % | 60 - 130% 60 - 130% Method: ME-(AU)-{E Criteria 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 99 88 NVJAN433/AN434 Recovery % 100 99 96 96 96 96 |
| unine languagementation languagementation languagementation languagementation languagementation languagementation | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-toluene (Surrogate) Dibromofluoromethane (Surrogate) Dibromofluoromethane (Surrogate) Votatile Petroleum Hydrocarbons in Solt Parameter Trifluorotoluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.004 SE105013.002 SE105013.004 SE105013.004 SE105013.004 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.001 SE105013.001 SE105013.002 | % % % % % % % Units % % % | 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 85 88 NV]AN433/AN434 Recovery % 100 99 96 96 96 96 96 96 96 96 |
| anonamenta international in | d4-1,2-dichloroethane (Surrogate) d8-toluene (Surrogate) Dibromofluoromethane (Surrogate) VOCs in Water Parameter Bromofluorobenzene (Surrogate) d4-1,2-dichloroethane (Surrogate) d4-toluene (Surrogate) Dibromofluoromethane (Surrogate) Dibromofluoromethane (Surrogate) Votatile Petroleum Hydrocarbons in Soit Parameter Trifluorotoluene (Surrogate) | Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 BH101_0.1-0.2 Duplicate D101 Tripspike TS1 Sample Name Rinsate R1 Rinsate R1 | SE105013.002 SE105013.004 SE105013.001 SE105013.002 SE105013.004 SE105013.004 SE105013.002 SE105013.004 SE105013.004 SE105013.004 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 SE105013.003 | % % % % % % % \$ % % % % | 60 - 130% 60 - 130% Method: ME-(AU)-{E Criteria 60 - 130% 60 - 130% | 106 119 101 97 95 104 102 99 100 99 88 NVJAN433/AN434 Recovery % 100 99 96 96 96 96 |



7/2/2012

METHOD BLANKS

SE105013 R0

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| 1 I | | | | | |
|-----------|---|--|-------|-------------------------------|-----------------------|
| | | | | 1 5 13 5 6 8 ¹⁰ 13 | |
| 1 | Mercury (dissolved) in Water | | | | U)-[ENV]AN311/AN312 |
| | Sample Number | Parameter | Units | LOR | Result |
| | LB013240.001 | Mercury | mg/L | 0.0001 | <0.0001 |
| | | | | | |
| | | | | | |
| 1 | Mercury in Coll | | | Methor | I: ME-(AU)-[ENV]AN312 |
| | Mercury in Soil | | Units | LOR | Result |
| 1 | Sample Number | Parameter | | 0.05 | <0.05 |
| | LB013289.001 | Mercury | mg/kg | 0.00 | ~0.00 |
| _ | | | | | |
| | | | | | |
| - 3 | Metals in Water (Dissolved) by ICPOES | | | Method: ME-(/ | 4U)-[ENV]AN320/AN321 |
| | Sample Number | Parameter | Units | LOR | Result |
| and the | LB013223.001 | Arsenic, As | mg/L | 0.05 | <0.05 |
| | | Cadmium, Cd | mg/L | 0.005 | <0.005 |
| | | Chromium, Cr | mg/L | 0.005 | <0.005 |
| 1 | | Copper, Cu | mg/L | 0.01 | <0.01 |
| | | Lead, Pb | mg/L | 0.02 | <0.02 |
| 3 | | Nickel, Ni | mg/L | 0.01 | <0.01 |
| | | Zinc, Zn | mg/L | 0.01 | <0.01 |
|) | | | | Method: MF-(| AU)-JENVJAN400/AN420 |
| Ì | OC Pesticides in Soll | | 1000 | | |
| 1 | Sample Number | Parameter | Units | LOR | Result |
| | LB013151.001 | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 |
| | | Alpha BHC | mg/kg | 0.1 | <0.1 |
| downed to | | Lindane | mg/kg | 0.1 | <0.1 |
| | | Heplachlor | mg/kg | 0.1 | <0.1 |
| - 13 - | | Aldrin | mg/kg | 0.1 | <0.1 |
| | | Beta BHC | mg/kg | 0.1 | <0.1 |
| 1 | | Delta BHC | mg/kg | 0.1 | <0.1 |
| | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 |
| | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 |
| | | Gamma Chlordane | mg/kg | 0.1 | <0.1 |
| | | Alpha Chlordane | mg/kg | 0.1 | <0.1 |
| Ì | | p,p'-DDE | mg/kg | 0.1 | <0.1 |
| 1 | | Dieldrin | mg/kg | 0.05 | <0.05 |
| | | Endrin | mg/kg | 0.2 | <0.2 |
| | | Beta Endosulfan | mg/kg | 0.2 | <0.2 |
| august. | | p,p'-DDD | mg/kg | 0.1 | <0.1 |
| 1 | | ρ,ρ'-DDT | mg/kg | 0.1 | <0.1 |
| .) | | Endosulían sulphate | mg/kg | 0.1 | <0.1 |
| | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 |
| · | | Methoxychior | mg/kg | 0.1 | <0.1 |
| | | Endrin Kelone | mg/kg | 0.1 | <0.1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 125 |
| | | Tonadimo the Afond (Fonny) (confeguro) | | 6 é a sin | od: ME-(AU)-[ENV]AN42 |
| | PAH (Polynuclear Aromatic Hydrocarbons) in Soll | | | | |
| | Sample Number | Parameter | Units | LOR | Result |
| 1 | LB013154.001 | Naphthalene | mg/kg | 0.1 | <0.1 |
| | | 2-methylnaphthalene | mg/kg | 0.1 | <0,1 |
| | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 |
| ł | | 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 |
| 4 | | Anthracene | mg/kg | 0.1 | <0.1 |
| ł | | Fluoranthene | mg/kg | 0.1 | <0.1 |
| ĺ | | Pyrene | mg/kg | 0.1 | <0.1 |
| } | | Benzo(a)anlhracene | mg/kg | 0.1 | <0.1 |
| | | Chrysene | mg/kg | 0.1 | <0.1 |
| 1 | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 |
| | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | <0.1 |
| .1 | | Dibenzo(a&h)anthracene | mg/kg | 0.1 | <0.1 |
| | | Dibenzo(ash)antinacene Benzo(ghi)perylene | mg/kg | 0.1 | <0,1 |
| | | הפוולאלו אפו אפוים | | | |
| 1 | | | | | Dens 5 -1 |



METHOD BLANKS

SE105013 R0

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| PAH (Polynuclear Arom: | tatle Hydrocarbons) in Solt (| (continued) | | | od: ME-(AU)-[ENV]AN420 |
|---|---------------------------------------|---|--|--------------|------------------------|
| Sample Number | | Parameter | Units | LOR | Result |
| LB013154.001 | | Total PAH | mg/kg | 0.8 | <0.8 |
| LUVIO IO INTE I | Surrogates | d5-nitrobenzene (Surrogate) | % | - | 95 |
| | | 2-fluorobiphenyl (Surrogate) | % | | 109 |
| | | d14-p-terphenyi (Surrogate) | % | - | 115 |
| ······································ | · · · · · · · · · · · · · · · · · · · | | | Meth | od: ME-(AU)-[ENV]AN420 |
| An | natic Hydrocarbons) in Wate | | (Inter- | | |
| Sample Number | | Parameter | Units | LOR | Result |
| LB013144.001 | | Naphthalene | μg/L | 0.1 | <0.1 |
| | | 2-methylnaphthalene | μg/L | 0.1 | <0.1 |
| | | 1-methylnaphthalene | μg/L | 0.1 | <0.1 |
| | | Acenaphthylene | μg/L | 0.1 | <0.1 |
| | | Acenaphthene | μg/L | 0.1 | <0.1 |
| | | Fluorene | µg/L | 0.1 | <0.1 |
| | | Phenanthrene | μg/L | 0.1 | <0.1 |
| | | Anthracene | μg/L | 0.1 | <0.1 |
| | | Fluoranthene | µg/L | 0.1 | <0.1 |
| | | Pyrene | μ9/L | 0.1 | <0.1 |
| | | Benzo(a)anthracene | µg/L | 0.1 | <0.1 |
| | | Chrysene | µg/L | 0.1 | <0.1 |
| | | Benzo(a)pyrene | µg/L | 0.1 | <0.1 |
| | | Indeno(1,2,3-cd)pyrene | µg/L | 0.1 | <0.1 |
| | | Dibenzo(a&h)anthracene | µg/L | 0.1 | <0.1 |
| | | Benzo(ghi)perylena | μg/L | 0.1 | <0.1 |
| | Surrogates | d5-nitrobenzene (Surrogale) | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | - | 108 |
| | SUIIOgaico | 2-fluorobiphenyl (Surrogate) | % | - | 101 |
| | | d14-p-terphenyl (Surrogate) | % | - | 112 |
| | | a lap-rathmenta (convolario) | | senitrad str | E-(AU)-[ENV]AN400/AN4 |
| PCBs in Soil | | | | | |
| Sample Number | | Parameter | Units | LOR | Result |
| LB013151.001 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1221 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1232 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1242 | mg/kg | 0.2 | <0.2 |
| | | Arochior 1248 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1254 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1260 | mg/kg | 0.2 | <0.2 |
| | | Arochlor 1262 | mg/kg | 0.2 | <0.2 |
| | | Arochior 1268 | mg/kg | 0.2 | <0.2 |
| | | Total PCBs (Arochlors) | mg/kg | 1 | <1 |
| | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogale) | % | - | 125 |
| | | | | Mainad M | E-(AU)-[ENV]AN077/AN |
| | y Discrete Analyser (Aquaki | | | | |
| Sample Number | | Parameter | Units | LOR | Result |
| LB013182.001 | | Total Cyanide | mg/kg | 0.1 | <0.1 |
| | | | | | |
| | | | | | |
| Total Phenolics in Soll | | | | Mef | thod: ME-(AU)-[ENV]AN |
| | | | Units | LOR | Result |
| Sample Number | | Parameter Total Phoneix | mg/kg | 0.1 | <0.1 |
| LB013123.001 | | Total Phenois | | 0.1 | |
| | | | | | |
| | | | | | |
| Total Recoverable Met | tals in Soil by ICPOES from | m EPA 200.8 Digest | | Method: Mr | E-(AU)-[ENV]AN040/A |
| Sample Number | | Parameter | Units | LOR | Result |
| | | Arsenic, As | | | |
| LB013286.001 | | Arsenic, As Cadmium, Cd | mg/kg | 0.3 | <0.3 |
| | | Cadmium, Ca Chromium, Cr | mg/kg | 0.3 | <0.3 |
| | | | mg/kg | 0.5 | <0.5 |
| | | Copper, Cu | | 1 | <1 |
| | | Lead, Pb | mg/kg mg/kg | י 0.5 | <0.5 |
| | | Nickel, Ni | mg/kg mg/kg | 0.5 | <0.5 <0.5 |
| | | Zinc, Zn | mg/kg | 0.0 | -0.0 |
| | | | | | |


METHOD BLANKS

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| 1 | <u>(</u> | | | | | |
|-----------|--|---------------------------|-----------------------------------|-------|-------------|------------------------|
| | TRH (Total Recoverable | e Hvdrocarbons) in Soil | | | Metho | ad: ME-(AU)-(ENV)AN403 |
| | Sample Number | | Parameter | Units | LOR | Result |
| | Construction - Construction of the second se | | TRH C10-C14 | mg/kg | 20 | <20 |
| | LB013149.001 | | TRH C15-C28 | mg/kg | 50 | <50 |
| - | | | TRN 010-020 | * * | | |
| 4 | man (my) i franciscu de l | 11 to another in Window | | | Methy | od: ME-(AU)-[ENV]AN403 |
| | | le Hydrocarbons) in Water | | Units | LOR | Result |
| ١ | Sample Number | | Parameter | µg/L | 100 | <100 |
| | LB013144.001 | | TRH C10-C14 | µց/ւ. | 200 | <200 |
| ļ | | | TRH C15-C28 | իցչո | 200 | |
| | | | | | Method: ME- | (AU)-[ENV]AN433/AN434 |
| | VOC's in Soll | | | Units | LOR | Result |
| N. Second | Sample Number | | Parameter | | 0.1 | <0.1 |
| .) | LB013141.001 | Monocyclic Aromatic | Benzene | mg/kg | 0.1 | <0.1 |
| | | Hydrocarbons | Toluene | mg/kg | | <0.1 <0.1 |
| î | | | Ethylbenzene | mg/kg | 0.1 | |
| | | | m/p-xylene | mg/kg | 0.2 | <0.2 |
| | | | o-xylene | mg/kg | 0.1 | <0.1 |
| | | Oxygenated Compounds | MIBE (Methyl-tert-butyl ether) | mg/kg | 0.1 | <0.1 |
| | | Surrogates | Dibromofluoromethane (Surrogate) | % | - | 103 |
| | | | d4-1,2-dichloroethane (Surrogate) | % | - | 106 |
| { | | | d8-toluene (Surrogate) | % | - | 101 |
| .1 | | | Bromofluorobenzene (Surrogale) | % | - | 96 |
| | | Totals | Total BTEX* | mg/kg | - | 0 |
| 1 | Volatile Petroleum Hydr | | | | Method: ME | -(AU)-[ENV]AN433/AN434 |
| | Sample Number | | Parameter | Units | LOR | Result |
| . 1 | LB013141.001 | | TRH C6-C9 | mg/kg | 20 | <20 |
| | LD010141.001 | Surrogates | Trifluorotoluene (Surrogate) | % | - | 101 |
| 1 | | ourogato | | | | |
| | Volatile Petroleum Hyd | drocarbons in Water | | | Method: ME | -(AU)-[ENV]AN433/AN434 |
| | Sample Number | | Parameter | Units | LOR | Result |
| | LB013388.001 | | TRH C6-C9 | μg/L | 40 | <40 |
| Ĩ. | LB013300.001 | Surrogales | Trifluorotoluene (Surrogate) | % | - | 98 |
| | | GUILOGAIGS | Interesting to an address | | | |

SGS

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 It is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| ercury (dissolved) | j in Water | | | | | | | Method: ME-(Al | | |
|---------------------------------------|--|--|--|---|--|---|--------------------------------------|--|----------------------------------|----------------------|
| riginal | Duplicate | Parameter | er | | U) | tits LOR | Original | | Any and the second second second | School and Conductor |
| E105013.003 | LB013240.013 | Mercury | | | | g/L 0.0001 | <0,0001 | <0.0001 | 200 | 0 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| rcury in Soil | · · · · · startinet-regisserence-digitization (Mineter | | | | 00000000000000000000000000000000000000 | | | | d: ME- (AU)-[| |
| riginal | Duplicate | Parameter | er | | | nits LOR | Original | | | |
| E105002.015 | LB013289.014 | Mercury | | | | g/kg 0.05 | <0.05 | <0.05 | 147 | 0 |
| E105046A.029 | LB013289.023 | Mercury | | | mį | g/kg 0.05 | <0.05 | <0.05 | 200 | 0 |
| · · · · · · · · · · · · · · · · · · · | | | | | | | | Melhod: ME-(A | ALL IENVIA | **1320/ |
| | issolved) by ICPOES | Paramete | 9 -1 | | U I | nits LOR | Original | | | |
| riginal =105013.003 | Duplicate LB013223.011 | Paramete Arsenic, As | | | | nns LOR ng/L 0.05 | <0.05 | <0.05 | 200 | 1.10 (|
| 2300010,000 | LDV 10220.0 1 1 | Cadmium, C | | | | ig/L 0.005 | | <0.005 | 200 | 0 |
| | | Chromium, | | | | ig/L 0.005 | | <0.005 | 200 | ů |
| | | Copper, Cu | | | | ng/L 0.01 | <0.01 | <0.01 | 200 | ٥ |
| | | Lead, Pb | 7 | | | ng/L 0.02 | <0.02 | <0.02 | 200 | 0 |
| | | Nickel, Ni | | | rr | ng/L 0.01 | <0.01 | <0.01 | 200 | C |
| | | Zinc, Zn | | | | ng/L 0.01 | <0.01 | <0.01 | 200 | (|
| isture Content | | | | | | | | | d: ME-(AU)- | |
| riginal | Duplicate | Paramete % Moisture | | | | nits LOR | | Duplicate 0 | | RP |
| E105035.002 | LB013245.011 | % Moisture % Moisture | | | | % 0.5 % 0.5 | | 605.2427184466 0622.9074889867 | 40 32 | |
| E105040.002 E105040.003 | LB013245.022 LB013245.024 | % Moisture % Moisture | | | | % 0.5 % 0.5 | | 3495.2777777777777777777777777777777777777 | 32 | |
| | | | 3 | | | 76 | | | | |
| Pesticides in Sc | | Decostor | | | T. | | (Internal) | Method: ME-(A | | |
| riginal E104976.009 | Duplicate LB013151.004 | Paramete | ter robenzene (HCB) | | | nits LOR 1g/kg 0.1 | Original <0.1 | Ouplicate 0 | Criteria % 200 | 136 |
| 2104976.009 | LB013151.004 | Hexachioro Alpha BHC | and a second | | | ıg/kg 0.1 ıg/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Lindane | | | | ig/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Heptachlor | nr. | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Aldrin | · | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Beta BHC | ; | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Delta BHC | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Heptachlor | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | o,p'-DDE | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Alpha Endo | | | | ng/kg 0.2 | <0,2 | <0.2 | 200 | |
| | | Gamma Ch | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Alpha Chlo | lordane | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | trans-Nona | achlor | | 'n | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | p,p'-DDE | | | ú | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Dieldrin | | | | ng/kg 0.05 | | <0.2 | 200 | |
| | | Endrin | | | , | ng/kg 0.2 | <0.2 | <0.2 | 200 | |
| | | o,p'-DDD | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | o,p'-DDT | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Beta Endos | | | | ng/kg 0.2 | <0.2 | <0.2 | 200 | |
| | | p,p'-DDD | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | p,p'-DDT | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | | an sulphate | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Endrin Alde | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | Methoxych | | | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| | | | | | n | ng/kg 0,1 | <0.1 | <0.1 | 200 | |
| | | Endrin Keto | | | | | | | 30 | |
| | | Endrin Kete progates Tetrachloro | oro-m-xylene (TCMX) (Surrogate) |) | _ | % - | 130 | 130 | | |
| SE105002.011 | Surr LB013151.016 | Endrin Keto progates Tetrachloro Hexachloro | pro-m-xylene (TCMX) (Surrogale) probenzene (HCB) | • | | ng/kg 0.1 | <0.1 | <0.1 | 200 | |
| SE105002.011 | | Endrin Keto nrogates Tetrachloro Hexachloro Alpha BHC | pro-m-xylene (TCMX) (Surrogale) probenzene (HCB) | • | n | ng/kg 0.1 ng/kg 0.1 | <0.1 <0.1 | <0.1 <0.1 | 200 200 | |
| SE105002.011 | | Endrin Keta Irrogates Tetrachloro Hexachloro Alpha BHC Lindane | oro-m-xylene (TCMX) (Surrogale) probenzene (HCB) HC |) | n | ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 | <0.1 <0.1 <0.1 | <0.1 <0.1 <0.1 | 200 200 200 | |
| SE105002.011 | | Endrin Kelt urrogates Tetrachlorc Hexachlorc Alpha BHC Lindane Heptachlor | oro-m-xylene (TCMX) (Surrogale) probenzene (HCB) HC |) | n n n | ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 | <0.1 <0.1 <0.1 <0.1 | <0.1 <0 <u>.1</u> <0.1 | 200 200 200 200 | |
| SE105002.011 | | Endrin Kelt urrogates Tetrachlorc Hexachlorc Alpha BHC Lindane Heptachlor Aldrin | oro-m-xylene (TCMX) (Surrogate) probenzene (HCB) HC or |) | ח ח ח ח | ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 | <0.1 <0.1 <0.1 <0.1 <0.1 | <0.1 <0.1 <0.1 <0.1 | 200 200 200 200 200 | |
| SE105002.011 | | Endrin Kelt urrogates Tetrachlorc Hexachlorc Alpha BHC Lindane Heptachlor | oro-m-xylene (TCMX) (Surrogate) probenzene (HCB) łC or |) | ת ה ת ת | ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 ng/kg 0.1 | <0.1 <0.1 <0.1 <0.1 | <0.1 <0 <u>.1</u> <0.1 | 200 200 200 200 | |

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SGS

DUPLICATES

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| C Pesticides in Soli | il (continued) | | | | | N | lethod: ME-(| (AU)-[ENV]AN | 4400/AM |
|----------------------|---------------------|--|--|---------------------------------------|------------|--------------|------------------|---------------|---------|
| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD |
| SE105002.011 | LB013151.016 | And the second s | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| 2105002.011 | LEO 19 19 10 10 10 | | | | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Endosulfan | mg/kg | | | | | |
| | | | Gamma Chiordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Alpha Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | trans-Nonachlor | mg/kg | 0.1 | 0 | 0 | 200 | 0 |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Dieldrin | mg/kg | 0.05 | <0.2 | <0.2 | 200 | 0 |
| | | | Endrin | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | | | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | o,p'-DDT | mg/kg | | | | | u 0 |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | 200 | |
| | | | p,p'-DDD | mg/kg | 0.1 | <0,1 | <0.1 | 200 | (|
| | | | p,p'-DDT | mg/kg | 0.1 | <0.1 | <0.1 | 200 | (|
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 0 |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | 200 | (|
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | 200 | C |
| | | | Endrin Kelone | mg/kg | 0.1 | 0 | 0 | 200 | (|
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 130 | 110 | 30 | 1 |
| | | | I BURCHIOLO-III-XAIRIIG (I OMAA) Controgenoy | <i>i</i> ~ | - | 100 | | | |
| H (Polynuclear Ar | vromatic Hydrocarbo | ons) in Soil | | | | | Metho | od: ME-(AU)-{ | (ENV) |
| Driginal | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RP |
| E105001.001 | LB013154.004 | | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| 100001.001 | LDU 10 104.00- | | | | 0.1 | <0.1 | <0.1 | 200 | |
| | | | 2-methylnaphthalene | mg/kg | | | | 200 | |
| | | | 1-methylnaphthalene | mg/kg | 0.1 | <0.1 | <0.1 | | |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 1 |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | 1 |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Phenanthrene | mg/kg | 0.1 | 0.1 | 0.3 | 87 | 8 |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Fluoranthene | mg/kg | 0.1 | 0.4 | 0.6 | 52 | 4 |
| | | | | | 0.1 | 0,4 | 0.6 | 51 | |
| | | | Pyrene Boozo/o)anthmoozo | mg/kg | | | | | |
| | | | Benzo(a)anthracene | mg/kg | 0,1 | 0.2 | 0.3 | 73 | • |
| | | | Chrysene | mg/kg | 0.1 | 0.2 | 0.3 | 74 | |
| | | | Benzo(b)fluoranthene | mg/kg | 0.1 | 0.3 | 0.4 | 60 | : |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | 0.1 | 0.2 | 97 | |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | 0.3 | 0.3 | 63 | |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | 0.2 | 0.2 | 89 | |
| | | | Dibenzo(a&h)anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | | | | | 0.3 | 200 75 | |
| | | | Benzo(ghi)perylene | mg/kg | 0.1 | 0.2 | | | |
| | | | Total PAH | mg/kg | 0.8 | 1.8 | 2.7 | 65 | |
| | | Surrogales | d5-nitrobenzene (Surrogate) | % | - | 94.0 | 95.0 | 30 | |
| | | | 2-fluorobiphenyl (Surrogate) | % | - | 109.0 | 106.0 | 30 | |
| | | | d14-p-terphenyl (Surrogate) | % | - | 108.0 | 102.0 | 30 | |
| SE105002.013 | LB013154.016 | | Naphthalene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| 2100000 | | | 2-methylnaphthaiene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | | | 0.1 | | <0.1 | 200 | |
| | | | 1-methylnaphthalene | mg/kg | | <0.1 | | | |
| | | | Acenaphthylene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Acenaphthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Fluorene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Phenanthrene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Anthracene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Fluoranthene | mg/kg | 0.1 | <0.1 | 0.2 | 107 | |
| | | | | | 0.1 | 0.1 | 0.2 | 101 | |
| | | | Pyrene Desert (a) and | mg/kg | | | | | |
| | | | Benzo(a)anthracene | mg/kg | 0.1 | <0.1 | 0.1 | 200 | |
| | | | Chrysene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Benzo(b)fluoranihene | mg/kg | 0.1 | <0.1 | 0.1 | 125 | |
| | | | Benzo(k)fluoranthene | mg/kg | 0.1 | <0.1 | <0.1 | 200 | |
| | | | Benzo(a)pyrene | mg/kg | 0.1 | <0.1 | 0,1 | 200 | |
| | | | | | | <0.1 | <0.1 | 200 | |
| | | | Indeno(1,2,3-cd)pyrene | mg/kg | 0.1 | | | 200 | |
| | | | | · · · · · · · · · · · · · · · · · · · | ~ 4 | | ar 1 1 1 | | |
| | | | Dibenzo(a&h)anthracene Benzo(ghl)perylene | mg/kg mg/kg | 0.1 0.1 | <0.1 <0.1 | <0.1 <0.1 | 200 | |

SGS

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| CALL (Caluaratea) | A secola Linterrarbe | nee) le Sell (centinu | theory | | | | Meth | nd MF-/AU | (ENVIAN420 |
|-------------------|----------------------|-----------------------|---|-------|-----|----------|------------|--------------|------------|
| Original | Aromatic Hydrocarbo | ofis) in oon (commu | Parameter | Units | LOR | Original | | Criteria % | |
| SE105002.013 | LB013154.016 | | Total PAH | mg/kg | 0.8 | <0.8 | <0.8 | 200 | 0 |
| 02,00002.010 | 2001010101 | Surrogates | d5-nitrobenzene (Surrogate) | % | - | 98.0 | 94.0 | 30 | 4 |
| | | Canogutoo | 2-fluorobiphenyl (Surrogate) | % | - | 108,0 | 106.0 | 30 | 2 |
| | | | d14-p-terphenyl (Surrogate) | % | - | 109.0 | 109.0 | 30 | 0 |
| PCBs in Soil | | | | | | | Method: ME | -(AU)-[ENV]A | N400/AN42 |
| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
| SE104976.009 | LB013151.004 | | Arochior 1016 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| 021010/0.000 | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1232 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochior 1242 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochior 1260 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachioro-m-xylene (TCMX) (Surrogale) | % | - | 130 | 130 | 30 | 0 |
| SE105002.011 | LB013151.016 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochior 1232 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochior 1260 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Arochlor 1268 | mg/kg | 0.2 | <0.2 | <0.2 | 200 | 0 |
| | | | Total PCBs (Arochlors) | mg/kg | 1 | <1 | <1 | 200 | 0 |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 130 | 110 | 30 | 15 |
| Total Phenolics I | n Soll | | | | | | Met | hod: ME-(AU | |
| Original | Duplicate | | Parameter | Units | LOR | Original | Duplicate | | |
| SE104939.001 | LB013123.006 | | Total Phenols | mg/kg | 0.1 | 0.2 | 0.2 | 63 | 18 |
| | | | | | | | | | |

Total Recoverable Metals in Soli by ICPOES from EPA 200.8 Digest

Method: ME-(AU)-[ENV]AN040/AN320

| and theorem and to | Therefore its could be been so that | | | | | | | |
|--------------------|-------------------------------------|--------------|-------|-----|-------------|---------------|------------|-------|
| Original | Duplicate | Parameter | Units | LOR | Original | Duplicate | Criteria % | RPD % |
| SE105013.001 | LB013286.014 | Arsenic, As | mg/kg | 3 | 4 | 3 | 117 | 12 |
| | | Cadmium, Cd | mg/kg | 0.3 | <0.3 | <0.3 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.3 | 5.8 | 5.7 | 35 | . 1 |
| | | Copper, Cu | mg/kg | 0.5 | 3.1 | 3.5 | 45 | 12 |
| | | Lead, Pb | mg/kg | 1 | 3 | 3 | 63 | 9 |
| | | Nickel, Ni | mg/kg | 0.5 | 1.9 | 2.1 | 55 | 7 |
| | | Zinc, Zn | mg/kg | 0.5 | 5.2 | 5.4 | 39 | 4 |
| E105063.001 | LB013286.024 | Arsenic, As | mg/kg | 3 | 13.28632110 | 683.256697059 | 53 | 0 |
| | | Cadmium, Cd | mg/kg | 0.3 | 0.040565485 | 30.0448060511 | 200 | 0 |
| | | Chromium, Cr | mg/kg | 0.3 | 3.212992909 | 63.2230809602 | 39 | 0 |
| | | Copper, Cu | mg/kg | 0.5 | 0.625013624 | 60.6187636420 | 110 | 1 |
| | | Lead, Pb | mg/kg | 1 | 1.292448270 | 21.3775617165 | | 6 |
| | | Nickel, Ni | mg/kg | 0.5 | 2.183653289 | 12.1856273721 | | 0 |
| | | Zinc, Zn | mg/kg | 0.5 | 2.532136547 | 92.4468310702 | 2 50 | 3 |
| | | | | | | | | |



LABORATORY CONTROL SAMPLES

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| | (| | | | | | | |
|--|---|---|--|--|---|--|---|---|
| | | | | | | | | 101000000 |
| 1 | Mercury (dissolved) in Water | | | | | Method: N | ME-(AU)-(ENV)A | W317/AN312 |
| ć | Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % F | Recovery % |
| | LB013240.002 | Mercury | mg/L | 0.0001 | 0.0092 | 0.008 | 80 - 120 | 115 |
| 1 | 20010240.002 | molouly | - | | | | | |
| | | | | | | | | |
| 1 | | | | | | | ethod: ME-(AU) | CABOAN949 |
| | Mercury in Soli | | | | | | | |
| | Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | Recovery % |
| 1 | LB013289.002 | Mercury | mg/kg | 0.05 | 0.21 | 0.2 | 70 - 130 | 106 |
| Ì | | - | | | | | | |
| 3 | | | | | | | | |
| | | 5.5 | | | | Method: (| ME-(AU)-[ENV]/ | AN320/AN321 |
| 7 | Metals in Water (Dissolved) by ICPO | F8 | | | | | | |
| | Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | |
| | LB013223.002 | Arsenic, As | mg/L | 0.05 | 1.9 | 2 | 80 - 120 | 96 |
| | | Cadmium, Cd | mg/L | 0.005 | 2.0 | 2 | 80 - 120 | 99 |
| | | Chromium, Cr | mg/L | 0,005 | 1.9 | 2 | 80 - 120 | 97 |
| 1 | | Copper, Cu | mg/L | 0.01 | 1.9 | 2 | 80 - 120 | 97 |
| | | Lead, Pb | mg/L | 0.02 | 2.0 | 2 | 80 - 120 | 98 |
| .) | | Nickel, Ni | mg/L | 0.01 | 2.0 | 2 | 80 - 120 | 98 |
| | | Zînc, Zn | mg/L | 0.01 | 2.0 | 2 | 80 - 120 | 99 |
| -1 | | | | | | Mathody | ME-(AU)-[ENV] | ANIA00/ANIA20 |
| | OC Pesticides in Soil | | | | | | | |
| 1 | Sample Number | Parameter | Units | LOR | Result | Expected | Criteria % | |
| | LB013151.002 | Heptachlor | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 120 |
| | | Aldrin | mg/kg | 0.1 | 0.3 | 0.2 | 60 - 140 | 130 |
| | | Delta BHC | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 120 |
| Contract of Contra | | Dieldrin | mg/kg | 0.05 | 0.24 | 0.2 | 60 - 140 | 120 |
| | | Endrin | mg/kg | 0.2 | 0.2 | 0.2 | 60 - 140 | 120 |
| | | p,p'-DDT | mg/kg | 0.1 | 0.2 | 0.2 | 60 - 140 | 80 |
| | 0 | | % | - | 95 | 100 | 60 - 140 | 95 |
|] | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogale) | 10 | | | | | |
| | | | | | | | 2 22 2 2 2 ATT 1 A 2 3 | N TOTALS TO A SPACE |
| 1 | PAH (Polynuclear Aromatic Hydrocar | bons) in Soil | | | | | /lethod: ME-(AU | |
| | | bons) in Soil Parameter | Units | LOR | Result | Expected | | |
| 1 | PAH (Polynuclear Aromatic Hydrocar Sample Number LB013154.002 | | Units mg/kg | LOR 0.1 | Result 4.5 | | | |
| | Sample Number | Parameter Naphthalene | | | | Expected | Criteria % | Recovery % |
| | Sample Number | Parameter Naphthalene Acenaphthylene | mg/kg | 0.1 | 4.5 | Expected 4 | Criteria % 60 - 140 | Recovery % 113 |
| | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene | mg/kg mg/kg mg/kg | 0.1 0.1 | 4.5 4.6 | Expected 4 4 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 |
| | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene | mg/kg mg/kg mg/kg mg/kg | 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 | Expected 4 4 4 | Criteria % 60 - 140 60 - 140 60 - 140 | Recovery % 113 114 120 |
| | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene | mg/kg mg/kg mg/kg mg/kg | 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 | Expected 4 4 4 4 4 | Criteria % 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 |
| | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene | mg/kg mg/kg mg/kg mg/kg mg/kg | 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 | Expected 4 4 4 4 4 4 4 | Criteria % 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 |
| i i i i i i i i i i i i i i i i i i i | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 | Expected 4 4 4 4 4 4 4 4 4 4 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 |
| | Sample Number LB013154.002 | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 | Expected 4 4 4 4 4 4 4 4 4 4 4 | Criteria % 60 - 140 60 - 140 | Resovery % 113 114 120 116 123 120 124 119 |
| And a second sec | Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 |
| and the second se | Sample Number LB013154.002 | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 | Expected 4 4 4 4 4 4 4 4 4 100 100 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 |
| And the second se | Sample Number LB013154.002 | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 |
| | Sample Number LB013154.002 Surrogates | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 | Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 |
| And a second sec | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 100 100 | Criteria % 60 - 140 60 - 140 80 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENVJAN42 |
| | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) 2-fluorobiphenyl (Surrogale) d14-p-terphenyl (Surrogale) rbons) in Water Parameter | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result | Expected 4 4 4 4 4 4 4 4 4 4 4 4 100 100 100 | Criteria % 60 - 140 60 - 140 Kethod: ME-(AL Criteria % | Recovery % 113 114 120 116 123 120 124 119 96 111 114 3)-{ENV}AN42 Recovery % |
| international international international international international international international international | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % % LUnits µg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - - - - - - - - - - - - - - - - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 | Expected 4 4 4 4 4 4 4 4 4 4 4 4 100 100 100 100 | Criteria % 60 - 140 60 - 140 80 - 140 80 - 140 Method: ME-(At Criteria % 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 3)-{ENVJAN42 Recovery % 91 |
| and the second the sec | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthrene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene Acenaphthylene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % LUnits μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - - - - - - - - - - - - - - - - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 100 100 100 1 | Criteria % 60 - 140 60 - 140 80 - 140 Method: ME-(AL Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}AM42 Recovery % 91 103 |
| | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - LOR 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 100 100 100 1 | Criteria % 60 - 140 60 - 140 80 - 140 Method: ME-(AL Criteria % 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}AM42 Recovery % 91 103 113 |
| and the second sec | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthrene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene Acenaphthylene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % LUnits μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - - - - - - - - - - - - - - - - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 | Expected 4 4 4 4 4 4 4 4 4 4 4 100 100 100 100 1 | Criteria % 60 - 140 60 - 140 80 - 140 Method: ME-(AU Criteria % 60 - 140 60 - 1 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENVJAN42 Recovery % 91 103 113 121 |
| in the second seco | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthrene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - LOR 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 100 | Criteria % 60 - 140 60 - 140 Criteria % 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}A2 Recovery % 91 103 113 121 109 |
| international international international international international international international international | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) rbons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - - - - - - - - - - - - - - - - - | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 | Expected 4 4 4 4 4 4 4 4 4 100 100 1 | Criteria % 60 - 140 60 - 140 Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}A42 Recovery % 91 103 113 121 109 119 |
| and the second the sec | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) d14-p-terphenyl (Surrogate) teons) in Water Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 - - - LOR 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 100 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 96 111 114 J)-{ENV}AM42 Recovery % 91 103 113 121 109 119 120 |
| and have been been and | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyt (Surrogate) d14-p-terphenyt (Surrogate) d14-p-terphenyt (Surrogate) thons) in Water Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 | Criteria % 60 - 140 60 - 140 Criteria % 60 - 140 60 - 140 | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}A42 Recovery % 91 103 113 121 109 119 |
| international international international international international international international international | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) dtons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Phenanthrene Physene | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 96 111 114 J)-{ENV}AM42 Recovery % 91 103 113 121 109 119 120 |
| international international international international international international international international | Sample Number LB013154.002 Surrogales PAH (Polynuclear Aromatic Hydrocar Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) drbons) in Water Paramoter Naphthalene Acenaphthene Phenanthrene Anghthalene Acenaphthene Phenanthrene Phonathrene Phonathrene Phyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 48 47 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 100 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 98 111 114 3)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 |
| international internationa | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) 2-fluorobiphenyl (Surrogale) d14-p-terphenyl (Surrogale) rbons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 48 47 98.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 40 40 40 40 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 96 111 114 J)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 |
| international internationa | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surrogate) d14-p-terphenyl (Surrogate) drbons) in Water Paramoter Naphthalene Acenaphthene Phenanthrene Anghthalene Acenaphthene Phenanthrene Phonathrene Phonathrene Phyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 47 98.0 101.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 40 40 100 10 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 96 111 114 J)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 101 116 |
| According to the second se | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) 2-fluorobiphenyl (Surrogale) d14-p-terphenyl (Surrogale) rbons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 47 98.0 101.0 116.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 40 40 40 100 10 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 101 116 /AN420/AN44 |
| international | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Phenanthrene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) 2-fluorobiphenyl (Surrogale) d14-p-terphenyl (Surrogale) rbons) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogale) | mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg % % % Units μg/L μg/L μg/L μg/L μg/L μg/L μg/L μg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 40 41 45 49 44 48 48 47 98.0 101.0 116.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 40 40 40 40 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 101 118 98 101 116 /AN420/AN44 Recovery % |
| and the second the sec | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 Surrogates PCBs in Soli | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surogate) d14-p-terphenyl (Surogate) dbens) in Water Parameter Naphthalene Acenaphthylene Acenaphthene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surogate) 2-fluorobiphenyl (Surogate) 2-fluorobiphenyl (Surogate) | mg/kg | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 36 41 45 49 44 48 48 47 98.0 101.0 116.0 Result 0.5 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 0 0 0 0 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 96 111 114 3)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 101 116 7AN400/AN44 Recovery % 129 |
| international | Sample Number LB013154.002 Surrogates PAH (Polynuclear Aromatic Hydrocar Sample Number LB013144.002 Surrogates PCBs in Soli Sample Number | Parameter Naphthalene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthylene Acenaphthene Phenanthrene Anthracene Fluoranthene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surogate) d14-p-terphenyl (Surogate) d14-p-terphenyl (Surogate) Acenaphthene Acenaphthene Acenaphthene Acenaphthene Acenaphthene Phenanthrene Pyrene Benzo(a)pyrene d5-nitrobenzene (Surrogate) 2-fluorobiphenyl (Surogate) d14-p-terphenyl (Surogate) d14-p-terphenyl (Surogate) | mg/kg mg/L mg/L | 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 4.5 4.6 4.8 4.6 4.9 4.8 5.0 4.7 98.0 111.0 114.0 Result 40 41 45 49 44 48 48 47 98.0 101.0 116.0 | Expected 4 4 4 4 4 4 4 4 4 4 100 100 100 100 Expected 40 40 40 40 40 40 40 40 40 40 40 40 40 | Criteria % 60 - 140 60 - | Recovery % 113 114 120 116 123 120 124 119 98 111 114 J)-{ENV}AN42 Recovery % 91 103 113 121 109 119 120 118 98 101 118 98 101 116 /AN420/AN44 Recovery % |



LABORATORY CONTROL SAMPLES

Laboratory Control Standard (LCS) results are evaluated against an expected result, typically the concentration of analyte spiked into the control during the sample preparation stage, producing a percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA /QC plan (Ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended dagger symbol (†) when outside suggested criteria.

| | | | | | | | | * talian di ' | *** 7810 IENOA | KI022/ANJ987 |
|---|-------------------------|--------------------------------|-----------------------------------|---|---------|---------|---|---------------|----------------------|--------------|
| | Total Cyanide in soil i | , by Discrete Ana ^r | Jyser (Aquakem) | | | | | | ME-(AU)-[ENV]AI | |
| | Sample Number | | Parameter | | Units | LOR | Result | | Criteria % R | |
| | LB013182.002 | | Total Cyanide | | mg/kg | 0.1 | 0.2 | 0.25 | 70 - 130 | 97 |
| | LD010102 | | | | | | | | | |
| | | | | | | | | | | |
| | market was a started of | | | | | | | N | lethod: ME-(AU)- | -(ENVJAN289 |
| | Total Phenotics in So |) | | | 11-22-2 | INCE | Thomas | Expected | Crîteria % F | |
| | Sample Number | | Parameter | | Units | LOR | Result | | 70 - 130 | 90 |
| | LB013123.002 | | Total Phenols | | mg/kg | 0.1 | 2.3 | 2.5 | 70 - 150 | 90 |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | Total Recoverable K | Votale in Soil by | ICPOES from EPA 200.8 Digest | | | | | Method: | ME-(AU)-[ENV]A | 4N040/AN320 |
| | | | | | Units | LOR | Result | Expected | Criteria % F | Recovery % |
| | Sample Number | | Parameter | | mg/kg | 3 | 49 | 50 | 80 - 120 | 98 |
| | LB013286.002 | | Arsenic, As | | | | 49 51 | 50 | 80 - 120 | 103 |
| | | | Cadmium, Cd | | mg/kg | 0.3 | | | 80 - 120 80 - 120 | 100 |
| | | | Chromium, Cr | | mg/kg | 0.3 | 50 | 50 | | - |
| | | | Copper, Cu | | mg/kg | 0.5 | 51 | 50 | 80 - 120 | 102 |
| | | | Lead, Pb | | mg/kg | 1 | 51 | 50 | 80 - 120 | 102 |
| | | | Nickel, Ni | | mg/kg | 0.5 | 51 | 50 | 80 - 120 | 102 |
| | | | Zinc, Zn | | mg/kg | 0.5 | 51 | 50 | 80 - 120 | 102 |
| | | | | | | | | t | Method: ME-(AU) | HENVIAN403 |
| | TRH (Total Recover | able Hydrocarbo | uns) in Soll | 3 | | | | | | |
| | Sample Number | | Parameter | | Units | | Result | Expected | | |
| | LB013149.002 | | TRH C10-C14 | | mg/kg | 20 | 41 | 40 | 60 - 140 | 103 |
| | | | TRH C15-C28 | | mg/kg | 50 | <50 | 40 | 60 - 140 | 98 |
| | | | 1111 010 02 | | | | | | | |
| | | | | | | | | 1 | Method: ME-(AU) | AJENVIAN403 |
| | TRH (Total Recover | rable Hydrocarbo | ons) in Water | | | | | | | |
| | Sample Number | | Parameter | | Units | | Result | Expected | | |
| | LB013144.002 | | TRH C10-C14 | | µg/L | 100 | 1100 | 1200 | 60 - 140 | 93 |
| | LOUIVIANCE | | TRH C15-C28 | | µg/L | 200 | 1100 | 1200 | 60 - 140 | 94 |
| | | | HALO IO OLO | | | | | | | |
| | | | | | | | | Method | I: ME-(AU)-[ENV] | MM433/AN434 |
| | VOC's in Soil | | | | | | | | | |
| | Sample Number | | Parameter | | Units | | Result | Expected | | |
| | LB013141.002 | Monocyclic | Benzene | | mg/kg | 0.1 | 2.7 | 3 | 60 - 140 | 90 |
| | LUCIO | Aromatic | Toluene | | mg/kg | 0.1 | 2.7 | 3 | 60 - 140 | 90 |
| | | AUthaus | Ethylbenzene | | mg/kg | 0.1 | 2.7 | 3 | 60 - 140 | 90 |
| | | | | | mg/kg | 0.2 | 5.4 | 5.9 | 60 - 140 | 92 |
| | | | m/p-xylene | | | 0.2 | 2,8 | 2,9 | 60 - 140 | 96 |
| | | | o-xylene | | mg/kg | | | 100 | 60 - 140 | 102 |
| | | Surrogates | Dibromofluoromethane (Surrogate) | | % | - | 102.0 | | | 102 |
| | | | d4-1,2-dichloroethane (Surrogate) | | % | - | 103.0 | 100 | 60 - 140 | |
| | | | d8-toluene (Surrogate) | | % | - | 101.0 | 100 | 60 - 140 | 101 |
| | | | Bromofluorobenzene (Surrogate) | | % | - | 108.0 | 100 | 60 - 140 | 108 |
| | | | | | | | | Method | : ME-(AU)-[ENV] | //AN433/AN43 |
| | VOCs in Water | | | | | - Maria | in the second | | | |
| | Sample Number | | Parameter | | Units | | | Expected | | |
| | LB013388.002 | Monocyclic | Benzene | | µg/L | 0.5 | 44 | 45.45 | 60 - 140 | 98 |
| | | Aromatic | Toluene | | µg/L | 0.5 | 42 | 45.45 | 60 - 140 | 93 |
| | | Promoto | Ethylbenzene | | µg/L | 0.5 | 42 | 45.45 | 60 - 140 | 93 |
| | | | - · · · | | μg/L | 1 | 81 | 90.9 | 60 - 140 | 89 |
| | | | m/p-xylene | | μg/L | 0.5 | 44 | 45.45 | 60 - 140 | 97 |
| | | | o-xylene | | h9r = | 0.0 | ., | | | |
| | Volatile Petroleum I | Hydrocarbons ir | n Soil | | | | | Method | d: ME-(AU)-[ENV | |
| | Sample Number | | Parameter | | Unit | s LOR | Result | Expected | Griteria% | Recovery % |
| | | | | | mg/kg | | 27 | 24.4 | 60 - 140 | 111 |
| | LB013141.002 | | TRH C6-C9 | | **a**a | | | | | · |
| | | | | | | | | | | |
| | | | | | | | | | وی پا سونی این د. د. | |
| | Votatile Petroleum I | . Hydrocarbons ir | n Water | | | | | Methor | d: ME-(AU)-(ENV | /JAN433/AN4. |
| | | | Parameter | | Unit | is Lor | Result | Expected | Criteria % | Recovery % |
| | Sample Number | | | | µg/L | 40 | 840 | 827 | 60 - 140 | 102 |
| Į | LB013388.002 | | TRH C6-C9 | | - e- | | | | | |
| | | | | | | | | | | |



MATRIX SPIKES

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

| fercury (dissolved) in Water | | | VOD | Result | Original | E- (AU)-[ENV]A Spike | Recovery |
|--|----------------------|---------------|---------------|--------|----------|-------------------------|-----------|
| QC Sample Sample Number SE104964.001 LB013240.004 | Parameter Mercury | Units mg/L | LOR 0.0001 | 0.0087 | 0,0078 | 0.008 | 109 |
| tercury in Soil | | | | | Mel | ihod: ME-(AU) | -[ENV]AN3 |

| QC Sample | Sample Number | Parameter | Units | (40)64 | Result | Original | эріке | Recovery |
|--------------|---------------|-----------|-------|--------|--------|----------|-------|----------|
| SE105002.006 | LB013289.004 | Mercury | mg/kg | 0.05 | 0.23 | <0.05 | 0.2 | 93 |
| | | | | | | | | |

| C Sample | Sample Number | - 15 M | Parameter | Units | LOR | Result | Original | Spike | Reco |
|---|------------------------|------------|---|--|---|--|---|---|--------------|
| E104976.021 | LB013151.006 | | Hexachlorobenzene (HCB) | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| 210101010121 | | | Alpha BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Lindane | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Heptachlor | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | |
| | | | Aldrin | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | |
| | | | Beta BHC | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Delta BHC | mg/kg | 0.1 | 0,1 | <0.1 | 0.2 | |
| | | | Heptachlor epoxide | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | o,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Alpha Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | |
| | | | Gamma Chlordane | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Alpha Chiordane | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | trans-Nonachlor | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | p,p'-DDE | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Dieldrin | mg/kg | 0.05 | 0.14 | <0.2 | 0.2 | |
| | | | Endrin | mg/kg | 0.2 | <0.2 | <0.2 | 0.2 | |
| | | | o,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | 0,p'-DDT | mg/kg | 0.1 | <0.1 | <0,1 | - | |
| | | | Beta Endosulfan | mg/kg | 0.2 | <0.2 | <0.2 | - | |
| | | | p,p'-DDD | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | p,p'-DDT | mg/kg | 0.1 | 0.2 | <0.1 | 0.2 | |
| | | | Endosulfan sulphate | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Endrin Aldehyde | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | Methoxychlor | mg/kg | 0.1 | <0.1 | <0.1 | - | |
| | | | | | | | | | |
| | | | Endrin Kelone | | 0.1 | <0.1 | <0.1 | - | |
| | | Surrogales | Endrin Kelone Tetrachloro-m-xylene (TCMX) (Surrogale) | mg/kg % | 0.1 | <0.1 73 | <0.1 130 | - 100 | |
| sti den in de servicio de s | - Annually the day | Surrogates | Endrin Ketone Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg | | | 130 | | I)-[EN |
| | ar Aromatic Hydrocarbo | | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg % | - | 73 | 130 Met | thod: ME-(AU | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) Parameter | mg/kg % Units | LOR | 73 Result | 130 Met Original | thod: ME-(AU Spike | |
| C Sample | | | Tetrachloro-m-xylene (TCMX) (Surrogate) Parameter Naphthalene | mg/kg % Units mg/kg | LOR 0.1 | 73 Result 4.4 | 130 Met Original <0.1 | thod: ME-(AU | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) Parameter Naphthalene 2-methylnaphthalene | mg/kg % Units mg/kg mg/kg | LOR 0.1 0.1 | 73 Result 4.4 <0.1 | 130 Met Original <0,1 <0,1 | thod: ME-(AU Spike | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene | mg/kg % Units mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 | 130 Met <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - - 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 | 130 Met coriginal <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthee Fluorene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0,1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 | 130 [//et <0,1 <0,1 <0,1 <0,1 <0,1 <0,1 <0,1 | thod: ME-(AU Spike 4 - 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene Acenaphthylene Acenaphthee Fluorene Phenanthrene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - - 4 4 - 4 - 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.9 | 130 Met Original <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 <0.1 0.4 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parametor Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Fluorene Phenanthrene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.9 4.5 | 130 Met 0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 <0.1 0.1 <0.1 0.4 0.4 0.4 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parametor Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Fluorene Phenanthrene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene Benzo(a)anthracene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.9 4.5 <0.1 | 130 Met Original <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 <0.1 0.4 0.4 0.4 0.2 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameton Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Phenanthrene Fluorenthene Fluorenthene Chrysene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met Original <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parametor Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Fluorene Phenanthrene Fluorene Fluorene Fluorene Fluorene Fluorene Fluorene Benzo(a)anthracene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met Original <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 0.2 0.3 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameton Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Phenanthrene Fluorenthene Fluorenthene Chrysene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met Original <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 0.2 0.3 0.2 | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - - - - | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg % UDIts mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - 4 4 4 - 4 4 4 4 4 | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogate) | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - - - - | |
| AH (Polynuclea IC Bample E105001.003 | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Acenaphthrene Fluorene Phenanthrene Anthracene Fluoranthene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene Benzo(k)fluoranthene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - - - - | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Acenaphthylene Fluorene Fluorene Fluorene Fluorene Fluorene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene | mg/kg % UDIts mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met 071ginal <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 0.1 0.1 0.2 0.2 0.3 0.2 <0.1 0.2 <0.3 0.2 <0.1 0.2 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0. | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - - - - | |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Acenaphthylene Fluorene Phenanthrene Fluorene Fluoranthrene Benzo(a)anthracene Chrysene Benzo(a)pyrene Indeno(1,2,3-cd)pyrene Dibenzo(a&h)anthracene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 4.9 <0.1 <0.1 38 | 130 Met 071ginal <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 <0.1 0.1 0.2 0.3 0.2 0.3 0.2 <0.3 0.2 <0.3 0.2 <0.1 <0.2 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.1 <0.2 <0.3 <0.2 <0.3 <0.2 <0.1 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0 | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - 4 4 - - 4 - - 4 - - - 4 - - - - 4 - | I)-{EN Re |
| C Sample | Sample Number | | Tetrachloro-m-xylene (TCMX) (Surrogale) Parameter Naphthalene 2-methylnaphthalene 1-methylnaphthalene Acenaphthylene Acenaphthylene Acenaphthrene Fluorene Phenanthrene Fluorene Phenanthrene Benzo(a)anthracene Chrysene Benzo(b)fluoranthene Benzo(k)fluoranthene Benzo(a)prene Indeno(1,2,3-cd)pyrene Dibenzo(a&h)anthracene Benzo(a)pirperylene | mg/kg % Units mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg mg/kg | LOR 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 0.1 | 73 Result 4.4 <0.1 <0.1 4.5 5.0 <0.1 4.7 4.9 4.9 4.5 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 < | 130 Met 071ginal <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 0.1 0.1 0.1 0.2 0.2 0.3 0.2 <0.1 0.2 <0.3 0.2 <0.1 0.2 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.1 <0.2 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.3 <0.2 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0.5 <0. | thod: ME-(AU Spike 4 - 4 4 4 4 4 4 4 4 - - - - - - | |



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MATRIX SPIKES

Matrix Spike (MS) results are evaluated as the percentage recovery of an expected result, typically the concentration of analyte spiked into a field sub-sample during the sample preparation stage. The original sample's result is subtracted from the sub-sample result before determining the percentage recovery. The criteria applied to the percentage recovery is established in the SGS QA/QC plan (ref: MP-(AU)-[ENV]QU-022). For more information refer to the footnotes in the concluding page of this report.

Recovery is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

| ar a othereroos | r Aromalíc Hydrocark | weed as construction to a term | deround) | | | | | | |
|-----------------|-------------------------|--------------------------------|---|-------|-----|--------|------------|---------------|-----------|
| C Sample | Sample Number | | Parameter | Units | LOR | Result | Original | | Recovery |
| E105001.003 | LB013154.007 | Surrogates | d14-p-terphenyl (Surrogate) | % | - | 118.0 | 103.0 | 100 | 118 |
| Bs in Soil | | | | | | | | E-(AU)-[ENV]A | - |
| C Sample | Sample Number | | Parameter | Units | LOR | Result | Original | Spike | Recovery |
| E104976.022 | LB013151.007 | | Arochlor 1016 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1221 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochior 1232 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1242 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1248 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochtor 1254 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochlor 1260 | mg/kg | 0.2 | 0.3 | <0.2 | 0.4 | 78 |
| | | | Arochlor 1262 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Arochior 1268 | mg/kg | 0.2 | <0.2 | <0.2 | - | - |
| | | | Total PCBs (Arochiors) | mg/kg | 1 | <1 | <1 | - | - |
| | | Surrogates | Tetrachloro-m-xylene (TCMX) (Surrogate) | % | - | 73 | 71 | 100 | 73 |
| (al Recoverabi | ie Metals in Soll by IC | OPOES from EP/ | A 200.8 Digest | | | | Method: Mr | (E-(AU)-{ENV} | jAN040/Al |
| C Sample | Sample Number | 2 | Parameter | Units | LOR | Result | Original | Spike | Recov |
| E105002.013 | LB013286.004 | | Arsenic, As | mg/kg | 3 | 40 | 4 | 50 | 72 |
| | | | Cadmium, Cd | mg/kg | 0,3 | 41 | <0.3 | 50 | 81 |
| | | | Chromium, Cr | mg/kg | 0.3 | 65 | 27 | 50 | 75 |
| | | | Соррег, Си | mg/kg | 0.5 | 51 | 11 | 50 | 8 |
| | | | Lead, Pb | mg/kg | 1 | 57 | 23 | 50 | 69 |
| | | | Nickel, Ni | mg/kg | 0.5 | 46 | 6.1 | 50 | 7 |
| | | | Zinc, Zn | mg/kg | 0.5 | 65 | 26 | 50 | 7 |



2.4

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: RPD = | OriginalResult - ReplicateResult | x 100 / Mean

The original result is the analyte concentration of the matrix spike. The Duplicate result is the analyte concentration of the matrix spike duplicate.

The RPD is evaluated against the Maximum Allowable Difference (MAD) criteria and can be graphically represented by a curve calculated from the Statistical Detection Limit (SDL) and Limiting Repeatability (LR) using the formula: MAD = 100 x SDL / Mean + LR

Where the Maximum Allowable Difference evaluates to a number larger than 200 it is displayed as 200.

RPD is shown in Green when within suggested criteria or Red with an appended reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

| | soil by Discrete Analyser (| (Aquakem) Para meter | Units | LOR | Duplicate | Method: ME-(AU)-[ENV]AN077/AN287 |
|---------------------------|-------------------------------|--------------------------------|-------|-----|-----------|----------------------------------|
| QC Sample SE105002.001 | Sample Number LB013182.004 | Total Cyanide | mg/kg | 0.1 | 0.5 | |
| Total Phenolics (| n Sali | | | | | Method: ME-(AU)-[ENV]AN289 |
| QC Sample | Sample Number | Parameter | Units | LOR | Duplicate | |

| refer ensuring the | Sample Romos | | | |
|--------------------|--------------|---------------|-------|-----|
| SE104976.005 | LB013123.012 | Total Phenols | mg/kg | 0.1 |
| | | | | |



FOOTNOTES

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here: http://www.au.sgs.com/sgs-mp-au-env-qu-022-qa-qc-plan-en-09.pdf

- Non-accredited analysis.
- Sample not analysed for this analyte.
- Analysis performed by external laboratory.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.

Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).

- ICR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- Recovery failed acceptance criteria due to sample heterogeneity.
- Refer to Analytical Report comments for further information.

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This test report shall not be reproduced, except in full.

| Ja 30/1/2012@ 318pm | Ship Laboratory Test Request / Chain of Custody Record | Page 1 of 1 | | Location: Mona Vale | | Friday 3 February 2012 (Normal 1A1) | PCB TOTAL TOTAL BTEX KEEP SAMPLE | | | YES YES | YES | YES YES | | | Received by | Signature 22 (if it is | | |
|---------------------|--|---|--|---------------------|---------------------------|--|--|---------------|--------------|---------------|---------------------|--------------|--|--|-----------------|------------------------|--------------------|--|
| | | Ę | | Project Manager: JX | | Results required by: Friday 3 | TPH [•] PAH OCP & PAH OCP BTEX | | | | | | | | | Name . | T | SP Soil sample (plastic page) |
| | Ser of the series of the serie | Tel: (02) 4722 2700 P O Box 880 Fax: (02) 4722 5161 PENRITH NSW 2751 email: info@geotec | | (: 02 8594 0499 | | Soil Water | Heavy Metals As, Cd, Cr, Cu, Ph. Ho. Ni and Zh | SG | SG | SG | | MG | | | | Date | | soil sample (glass jar) |
| | ΕΡΤΥ ΚΤΟ | PENRITH | | FAX: | | Date Time | | 27/01/2012 - | 27/01/2012 - | 27/01/2012 - | , | 27/01/2012 - | | | Relinauished by | Signature | X | rttie SG ottie |
| | GEOTECHNIQUE PTY LTD | Lemko Place PENRITH NSW 2750 | TO: SGS ENVIRONMENTAL SERVICES UNIT 16 33 MADDOX STREET ALEXANDRIA NSW 2015 | PH: 02 8594 0400 | ATTN: MS ANGELA MAMALICOS | Sampling details Location Depth (m) | | BH101 0.1-0.2 | | BH101 0.7-0.8 | 2. Duplicate D101 - | Rinsate R1 | | | | Name | JOHN XU Legend: | WG Water sample, glass bottle WP Water sample, plastic bottle |



SAMPLE RECEIPT ADVICE

| | | | | Hugen Crew | ford |
|--|--|--|---|--------------------|----------------------------|
| ontact | John Xu | | Manager | Huong Craw | rord dria Environmental |
| ent | Geotechnique | | | Unit 16, 33 M | |
| dress | P.O. Box 880 PENRITH NSW 27 | 751 | Address | Alexandria N | |
| elephone | 02 4722 2700 | | Telephone | +61 2 8594 | 0400 |
| acsimile | 02 4722 6161 | | Facsimile | +61 2 8594 | 0499 |
| nail | john.xu@geotech. | com.au | Email | au.environm | ental.sydney@sgs.com |
| oject | 12593/2 - Mona Va | ale | Samples Received | Fri 27/1/201 | |
| rder Number | (Not specified) | | Report Due | Fri 3/2/2012 | |
| amples | 4 | | SGS Reference | SE105013 | |
| erence SE105013 v Sample counts b Date documenta | vhen making enquiries. Re y matrix lion received | fer below for details relating 3 Soils, 1 Water 30/1/12@3:18pm | s are expected to be ready by Friday 3 to sample integrity upon receipt. Type of documentation rece Samples received in good o | aived order | COC Yes |
| | d without headspace | Yes | Sample temperature upon r | | 3.9°C |
| Sample containe | r provider d in correct containers | SGS Yes | Turnaround time requested Sufficient sample for analys | | Standard Yes |
| Samples receive Sample cooling r | | Ice Bricks | Samples clearly labelled | 10 | Yes |
| amples will be held t | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | ucted. |
| amples will be held f | or one month for water sa | mples and two months for se | oil samples from date of report, unless | otherwise instru | ucted. |
| OMMENTS | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | ucted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | ucted. |
| | or one month for water sa | mples and two months for se | oil samples from date of report, unless | s otherwise instru | ucted. |
| | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | ucted. |
| | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | s otherwise instru | ucted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | s otherwise instru | ucted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | s otherwise instru | Joted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |
| · | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |
| | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |
| - | or one month for water sa | mples and two months for s | oil samples from date of report, unless | s otherwise instru | Joted. |
| - | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |
| - | or one month for water sa | mples and two months for s | oil samples from date of report, unless | e otherwise instru | Joted. |
| | or one month for water sa | mples and two months for s | oil samples from date of report, unless | otherwise instru | Joted. |

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SGS Australia Pty Ltd ABN 44 000 964 278 WA 6105 Australia WA 6896 Australia



SAMPLE RECEIPT ADVICE

SE105013

| ent Geotechn | ique | | | | Project | | | 1259 | 93/2 - Mona | Vale |
|---------------------|-----------------------|---|--------------|---|-------------------------|--|---|---------------|--|------|
| SUMMARY OF ANALYSIS | | | | | | | | | | |
| No. Sample ID | OC Pesticides in Soil | PAH (Polynuclear Aromatic Hydrocarbons) in | PCBs in Soil | Total Cyanide in soil by Discrete Analyser | Total Phenolics in Soil | Total Recoverable Metals in Soil by ICPOES from | TRH (Total Recoverable Hydrocarbons) in Soil | VOC's in Soil | Volatile Petroleum Hydrocarbons in Soil | |
| 001 BH101_0.1-0.2 | 26 | 22 | 11 | 1 | | 17 | 4 | 12 | 6 | |
| 002 Duplicate D101 | 26 | 22 | 11 | 1 | | 1 7 | 4 | 12 | 6 | |
| 004 Tripspike TS1 | - | - | - | - | | | - | 12 | - | |

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details.

Testing as per this table shall commence immediately unless the client intervenes with a correction.



SAMPLE RECEIPT ADVICE

SE105013

| SUMMARY OF ANALYSIS | 700 700 700 1 - 1 1 1 0 00 00 700 700 7 1 - 1 | CLIENT DETAIL | | chnique | | | | Project | | | 12593/2 | - Mona Vale | |
|--|--|---------------|----------------|---------------------------------|-----------------|--|------------------|---|--|---------------|---|-------------|--|
| No. Sample ID E 001 BH101_0.1-0.2 - 1 - - - 002 Duplicate D101 - 1 - 1 - - | No. Sample ID E F 001 BH101_0.1-0.2 - 1 -< | SUMMARY OF | ANALYSIS | | | | | | | | | | |
| 001 BH101_0.1-0.2 - 1 - 1 - - - - 002 Duplicate D101 - 1 - 1 - - - - | 001 BH101_0.1-0.2 - 1 - - - - - 002 Duplicate D101 - 1 - 1 - - - | Νο | Sample ID | Mercury (dissolved) in Water | Mercury in Soil | Metals in Water (Dissolved) by ICPOES | Moisture Content | PAH (Polynuclear Aromatic Hydrocarbons) in | TRH (Total Recoverable Hydrocarbons) in Water | VOCs in Water | Volatile Petroleum Hydrocarbons in Water | | |
| 002 Duplicate D101 - 1 - 1 | 002 Duplicate D101 - 1 - 1 | | | - | 1 | - | 1 | - | - | - | _ | | |
| | | | | | | | | | | | | | |
| 003 Rinsate R1 1 - 7 - 22 4 12 6 | 003 Rinsate R1 1 - 7 - 22 4 12 6 | 002 | Duplicate D101 | - | 1 | - | 1 | - | - | - | - | | |
| | | 003 | Rinsate R1 | 1 | - | 7 | - | 22 | 4 | 12 | 6 | | |

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document. The numbers shown in the table indicate the number of results requested in each package. Please indicate as soon as possible should your request differ from these details. Testing as per this table shall commence immediately unless the client intervenes with a correction.



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

68251

Client: Geotechnique Pty Ltd PO Box 880 Penrith NSW 2751

Attention: John XU

Sample log in details:

| Your Reference: | 12593/1, Moi | na Val | Ð |
|---|--------------|--------|----------|
| No. of samples: | 1 Soil | | _ |
| Date samples received / completed instructions received | 30/01/12 | 1 | 30/01/12 |

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:
 3/02/12
 / 3/02/12

 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

Kluigh Morgen

Rhian Morgan Reporting Supervisor

Nick Sarlamis Inorganics Supervisor



| vTRH & BTEX in Soil | | |
|--------------------------------|-------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | - | 31/01/2012 |
| Date analysed | - | 01/02/2012 |
| vTRHC6 - C9 | mg/kg | <25 |
| Benzene | mg/kg | <0.2 |
| Toluene | mg/kg | <0.5 |
| Ethylbenzene | mg/kg | <1 |
| m+p-xylene | mg/kg | <2 |
| o-Xylene | mg/kg | <1 |
| Surrogate aaa-Trifluorotoluene | % | 91 |

Envirolab Reference: 68251 Revision No: R 00

Client Reference: 12593/1, Mona Vale

| sTRH in Soil (C10-C36) | | |
|------------------------|---|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | There and they are then over pass and back the face too | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | - | 31/01/2012 |
| Date analysed | - | 31/01/2012 |
| TRHC10 - C14 | mg/kg | <50 |
| TRHC 15 - C28 | mg/kg | <100 |
| TRHC29 - C36 | mg/kg | <100 |
| Surrogate o-Terphenyl | % | 90 |

Envirolab Reference: 68251 Revision No: R 00

12593/1, Mona Vale

| PAHs in Soil | | |
|---------------------------|-------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | Pia . | 31/01/2012 |
| Date analysed | - | 01/02/2012 |
| Naphthalene | mg/kg | <0.1 |
| Acenaphthylene | mg/kg | <0.1 |
| Acenaphthene | mg/kg | <0.1 |
| Fluorene | mg/kg | <0.1 |
| Phenanthrene | mg/kg | <0.1 |
| Anthracene | mg/kg | <0.1 |
| Fluoranthene | mg/kg | <0.1 |
| Pyrene | mg/kg | <0.1 |
| Benzo(a)anthracene | mg/kg | <0.1 |
| Chrysene | mg/kg | <0.1 |
| Benzo(b+k)fluoranthene | mg/kg | <0.2 |
| Benzo(a)pyrene | mg/kg | <0.05 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | <0.1 |
| Dibenzo(a,h)anthracene | mg/kg | <0.1 |
| Benzo(g,h,i)perylene | mg/kg | <0.1 |
| Surrogate p-Terphenyl-d14 | % | 87 |

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12593/1, Mona Vale

| Organochlorine Pesticides | | |
|---------------------------|-------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | - | 31/01/2012 |
| Date analysed | - | 02/02/2012 |
| 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 |
| Endosulfanl | mg/kg | <0.1 |
| DDE | mg/kg | <0.2 |
| Dieldrin | mg/kg | <0.1 |
| Endrin | mg/kg | <0.1 |
| DDD | mg/kg | <0.2 |
| Endosulfan II | mg/kg | <0.1 |
| DDT | mg/kg | <0.2 |
| Endrin Aldehyde | mg/kg | <0.1 |
| Endosulfan Sulphate | mg/kg | <0.1 |
| Methoxychlor | mg/kg | <0.1 |
| Surrogate TCLMX | % | 88 |

Page 5 of 16

Client Reference: 12593/1, Mona Vale

| PCBs in Soil | | |
|-----------------|-------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| DateSampled | | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | - | 31/01/2012 |
| Date analysed | - | 02/02/2012 |
| 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 | % | 88 |

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Client Reference: 12593/1, Mona Vale

| Total Phenolics in Soil | | |
|-----------------------------|-------------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | *********** | 27/01/12 |
| Type of sample | | Soil |
| Date extracted | - | 01/02/2012 |
| Date analysed | - | 01/02/2012 |
| Total Phenolics (as Phenol) | mg/kg | <5 |

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Envirolab Reference: 68251 Revision No: R 00

Client Reference:

12593/1, Mona Vale

| Acid Extractable metals in soil | | |
|---------------------------------|-----------|----------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | ********* | 27/01/12 |
| Type of sample | | Soil |
| Arsenic | mg/kg | <4 |
| Cadmium | mg/kg | <0.5 |
| Chromium | mg/kg | 5 |
| Copper | mg/kg | 5 |
| Lead | mg/kg | 2 |
| Мегсигу | mg/kg | <0.1 |
| Nickel | mg/kg | 3 |
| Zinc | mg/kg | 5 |

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Envirolab Reference: 68251 Revision No: R 00 Page 8 of 16

Client Reference: 12593/1, Mona Vale

31/01/2012

31/01/2012

<0.5

| cellaneous Inorg - soil | | |
|-------------------------|-------|----------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | | 27/01/12 |
| Type of sample | | Soil |

-

-

mg/kg

Miscellaneous

Date prepared

Date analysed

Total Cyanide

68251 Envirolab Reference: R 00 **Revision No:**

Client Reference: 12593/1, Mona Vale

| Moisture | | |
|----------------|-------|------------|
| Our Reference: | UNITS | 68251-1 |
| Your Reference | | S101 |
| Date Sampled | | 27/01/12 |
| Type of sample | | Soil |
| Date prepared | - | 31/01/2012 |
| Date analysed | - | 01/02/2012 |
| Moisture | % | 18 |

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Envirolab Reference: 68251 Revision No: R 00

Client Reference: 12593/1, Mona Vale

| MethodID | 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-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-013 | Cyanide - total determined colourimetrically after distillation, based on APHA 21st ED, 4500-CN_C,E. Free cyanide determined colourimetrically after filtration. |
| Inorg-008 | Moisture content determined by heating at 105 deg C for a minimum of 4 hours. |

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| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recove |
|---|-------|-----|-------------------|----------------|---------------|----------------------------|-----------|-------------------|
| TRH&BTEX in Soil | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 31/01/2 012 | [NT] | [NT] | LCS-2 | 31/01 |
| Date analysed | - | | | 01/02/2 012 | [NT] | [NT] | LCS-2 | 01/02 |
| vTRHC6 - C9 | mg/kg | 25 | Org-016 | <25 | [NT] | [NT] | LCS-2 | 10 |
| Benzene | mg/kg | 0.2 | Org-016 | <0.2 | [NT] | [NT] | LCS-2 | 10 |
| Toluene | mg/kg | 0.5 | Org-016 | <0.5 | [NT] | [NT] | LCS-2 | 10 |
| Ethylbenzene | mg/kg | 1 | Org-016 | <1 | [NT] | [NT] | LCS-2 | 1 |
| m+p-xylene | mg/kg | 2 | Org-016 | <2 | [NT] | [NT] | LCS-2 | 10 |
| o-Xylene | mg/kg | 1 | Org-016 | <1 | [NT] | [NT] | LCS-2 | 10 |
| <i>Surrogate</i> aaa- Trifluorotoluene | % | | Org-016 | 93 | [NT] | [TN] | LCS-2 | 10 |
| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike Recov |
| TRH in Soil (C10-C36) | | | | | | Base II Duplicate II %RPD | | |
| Date extracted | - | | | 31/01/2 012 | [NT] | [NT] | LCS-2 | 31/0 |
| Date analysed | - | | | 31/01/2 012 | [NT] | [NT] | LCS-2 | 31/0 |
| TRHC 10 - C14 | mg/kg | 50 | Org-003 | <50 | [NT] | [NT] | LCS-2 | 1 |
| TRHC15 - C28 | mg/kg | 100 | Org-003 | <100 | [NT] | [NT] | LCS-2 | 1 |
| TRHC29 - C36 | mg/kg | 100 | Org-003 | <100 | [NT] | [NT] | LCS-2 | 1 |
| Surrogate o-Terphenyl | % | | Org-003 | 97 | [NT] | [NT] | LCS-2 | 1 |
| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike Reco |
| PAHs in Soil | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 31/01/2 012 | [NT] | [TM] | LCS-2 | 31/ |
| Date analysed | - | | | 01/02/2 012 | [NT] | [NT] | LCS-2 | 01/ |
| Naphthalene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | LCS-2 | |
| Acenaphthylene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | [NR] | |
| Acenaphthene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [TN] | [NR] | |
| Fluorene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [TM] | LCS-2 | |
| Phenanthrene | mg/kg | 0.1 | Org-012 subset | <0.1 | [TN] | [TN] | LCS-2 | |
| Anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | [NR] | |
| Fluoranthene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | LCS-2 | |
| Pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | LCS-2 | |
| Benzo(a)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [TM] | [NR] | |
| Chrysene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [TN] | LCS-2 | |

| Envirolab Reference: | 68251 |
|----------------------|-------|
| Revision No: | R 00 |

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| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
|-------------------------------|-------|------|-------------------|-----------------------|---------------|----------------------------|-----------|---------------------|
| PAHs in Soil | | | | | | Base II Duplicate II % RPD | | Recover |
| Benzo(b+k)fluoranthene | mg/kg | 0.2 | Org-012 subset | <0.2 | [NT] | [NT] | [NR] | [NR] |
| Benzo(a)pyrene | mg/kg | 0.05 | Org-012 subset | <0.05 | [NT] | [NT] | LCS-2 | 1239 |
| Indeno(1,2,3-c,d)pyrene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | [NR] | [NR |
| Dibenzo(a,h)anthracene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | [NR] | [NR |
| Benzo(g,h,i)perylene | mg/kg | 0.1 | Org-012 subset | <0.1 | [NT] | [NT] | [NR] | [NR |
| Surrogate p-Terphenyl- d14 | % | | Org-012 subset | 91 | [NT] | [NT] | LCS-2 | 105 |
| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
| Organochlorine Pesticides | | | | | | Base II Duplicate II %RPD | | Recover |
| Date extracted | - | | | 31/01/2 | [NT] | [NT] | LCS-2 | 31/01/2 |
| Date analysed | - | | | 012 01/02/2 012 | [NT] | [NT] | LCS-2 | 01/02/2 |
| HCB | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [NF |
| alpha-BHC | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 119 |
| gamma-BHC | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [NI |
| beta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 126 |
| Heptachlor | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 114 |
| delta-BHC | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [N |
| Aldrin | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 10 |
| Heptachlor Epoxide | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 11 |
| gamma-Chlordane | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [N |
| alpha-chlordane | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [N |
| Endosulfan l | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [TN] | [NR] | [N |
| DDE | mg/kg | 0.2 | Org-005 | <0.2 | [NT] | [NT] | LCS-2 | 13 |
| Dieldrin | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 12 |
| Endrin | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 12 |
| DDD | mg/kg | 0.2 | Org-005 | <0.2 | [NT] | [NT] | LCS-2 | 13 |
| Endosulfan II | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [TN] | [NR] | [N |
| DDT | mg/kg | 0.2 | Org-005 | <0.2 | [NT] | [NT] | [NR] | [1 |
| Endrin Aldehyde | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [1 |
| Endosulfan Sulphate | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | LCS-2 | 12 |
| Methoxychlor | mg/kg | 0.1 | Org-005 | <0.1 | [NT] | [NT] | [NR] | [] |
| Surrogate TCLMX | % | | Org-005 | 98 | [NT] | [NT] | LCS-2 | 9 |

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| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % |
|------------------------------------|-------|-----|-----------------------|----------------|---------------|----------------------------|-----------|--------------------|
| PCBs in Soil | | | | | | Base II Duplicate II % RPD | | Recovery |
| Date extracted | - | | | 31/01/2 012 | [NT] | [NT] | LCS-2 | 31/01/2 |
| Date analysed | - | | | 01/02/2 012 | [NT] | [NT] | LCS-2 | 01/02/2 |
| Arochlor 1016 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [TN] | [NR] | [NR |
| Arochlor 1221 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [NT] | [NR] | [NR |
| Arochlor 1232 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [NT] | [NR] | [NR |
| Arochlor 1242 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [NT] | [NR] | [NR |
| Arochlor 1248 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [TN] | [NR] | [NR |
| Arochlor 1254 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [NT] | LCS-2 | 124 |
| Arochlor 1260 | mg/kg | 0.1 | Org-006 | <0.1 | [NT] | [NT] | [NR] | [NF |
| Surrogate TCLMX | % | | Org-006 | 98 | [NT] | [NT] | LCS-2 | 103 |
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recover |
| Total Phenolics in Soil | | | | | | Base II Duplicate II % RPD | | |
| Date extracted | - | | | 01/02/2 012 | [NT] | [NT] | LCS-1 | 01/02/ |
| Date analysed | - | | | 01/02/2 012 | [NT] | [NT] | LCS-1 | 01/02/ |
| Total Phenolics (as Phenol) | mg/kg | 5 | Inorg-030 | <5 | [NT] | [NT] | LCS-1 | 111 |
| QUALITY CONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recove |
| Acid Extractable metals in soil | | | | | | Base II Duplicate II % RPD | | |
| Arsenic | mg/kg | 4 | Metals-020 ICP-AES | <4 | [NT] | [NT] | LCS-2 | 107 |
| Cadmium | mg/kg | 0.5 | Metals-020 ICP-AES | <0.5 | [NT] | [NT] | LCS-2 | 10 |
| Chromium | mg/kg | 1 | Metals-020 ICP-AES | <1 | [NT] | [NT] | LCS-2 | 10 |
| Copper | mg/kg | 1 | Metals-020 ICP-AES | <1 | [NT] | [NT] | LCS-2 | 10 |
| Lead | mg/kg | 1 | Metals-020 ICP-AES | <1 | [TN] | [NT] | LCS-2 | 10 |
| Mercury | mg/kg | 0.1 | Metals-021 CV-AAS | <0.1 | [NT] | [NT] | LCS-2 | 11 |
| Nickel | mg/kg | 1 | Metals-020 ICP-AES | <1 | [NT] | [NT] | LCS-2 | 10 |
| Zinc | mg/kg | 1 | Metals-020 ICP-AES | <1 | [NT] | [NT] | LCS-2 | 1 |

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| | | Clir | ent Referenc | se: 1: | 2593/1, Mona | Vale | | |
|-----------------------------|-------|------|--------------|----------------|---------------|---------------------------|-----------|---------------------|
| QUALITYCONTROL | UNITS | PQL | METHOD | Blank | Duplicate Sm# | Duplicate results | Spike Sm# | Spike % Recovery |
| Miscellaneous Inorg - soil | | | | | | Base II Duplicate II %RPD | | |
| Date prepared | - | | | 31/01/2 012 | [NT] | [NT] | LCS-1 | 31/01/20 |
| Date analysed | - | | | 31/01/2 012 | [NT] | [NT] | LCS-1 | 31/01/20 |
| Total Cyanide | mg/kg | 0.5 | Inorg-013 | <0.5 | [NT] | [NT] | LCS-1 | 106% |
| QUALITY CONTROL Moisture | UNITS | PQL | METHOD | Blank | | | | |
| Date prepared | - | - | | [NT] | - | | | |
| Date analysed | - | | | [NT] | | | | |
| Moisture | % | 0.1 | Inorg-008 | [NT] | | | | |

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Report Comments:

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

INS: Insufficient sample for this testPQL: Practical Quantitation LimitNA: Test not requiredRPD: Relative Percent Difference<: Less than</td>>: 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.

| | Custody Record | Page 1 Of 1 | | JX Location: Mona Vale | | Results required by: Friday 3 February 2012 (Normal TAT) | | OCP PCB TOTAL TOTAL TOTAL KEEP KEEP SAMPLE | Combination 9 YES | | | | | | Signature 20.0 | | Soil sample (plastic bag) • Purge & Trap Test required |
|---|----------------|---------------------------------|---|------------------------|------------------|--|----------------------|---|-------------------|--|--|--|--|-----------------|----------------|-----------------------------|---|
| Lev Teachard: 68 251 Lov Teachard: 68 251 Time Runnied: 05:05 | | email: info@geotech.com.au | Sampling By: | 201 Project Manager: | | Results requir | | Heavy Metais TPH* As, Cd, Cr, Cu, & & PAH Pb. Ho. Ni and Zn | | | | | | | | 30/01/2012 J. J. KONOLOWSKO | Soil sample (glass jar) |
| | Y I TD | PENRITH | q | FAX: 02 9910 6201 | | Sample type | Date Time Soil Water | | 27/01/2012 - SG | | | | | Relinguished by | Signature | × | SG Soil samp |
| | | Lemko Place PENRITH NSW 2750 | TO: ENVIROLAB SERVICES PTY LD 12 ASHLEY STREET CHATSWOOD NSW 2067 | PH: 02 9910 6200 | ATTN: AILEEN HIE | | Location Depth (m) C | | C101 - 27/0 | | | | | | Name | | Legend: WG Water sample, glass bottle WP Water sample, plastic bottle |



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

SAMPLE RECEIPT ADVICE

| <u>Client:</u> Geotechnique Pty Ltd PO Box 880 Penrith NSW 2751 | ph: 02 4722 2700 Fax: 02 4722 6161 |
|--|--|
| Attention: John XU | |
| Sample log in details: Your reference: Envirolab Reference: Date received: Date results expected to be reported: | 12593/1, Mona Vale 68251 30/01/12 3/02/12 |
| | |

| Samples received in appropriate condition for analysis: | YES |
|---|----------|
| No. of samples provided | 1 Soil |
| Turnaround time requested: | Standard |
| Temperature on receipt | Cool |
| Cooling Method: | Ice Pack |
| Cooling Method: | Ice Pack |

Comments:

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

Contact details: Please direct any queries to Aileen Hie or Jacinta Hurst ph: 02 9910 6200 fax: 02 9910 6201 email: ahie@envirolabservices.com.au or jhurst@envirolabservices.com.au

Page 1 of 1



ENVIRONMENTAL NOTES

GEOTECHNIQUE PTY LTD

IMPORTANT INFORMATION REGARDING YOUR ENVIRONMENTAL SITE ASSESSMENT

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

REASONS FOR AN ENVIRONMENTAL ASSESSMENT

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

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

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

ENVIRONMENTAL SITE ASSESSMENT LIMITATIONS

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

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

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

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

ENVIRONMENTAL SITE ASSESSMENT FINDINGS ARE PROFESSIONAL ESTIMATES

Site assessment identifies actual sub-surface conditions only at those points where samples are taken, when they are taken. Data obtained from the sampling and subsequent laboratory analyses are interpreted by geologists, engineers or scientists and opinions are drawn about the overall sub-surface conditions, the nature and extent of contamination, the likely impact on any proposed development and appropriate remediation measures. Actual conditions may differ from those inferred, because no professional, no matter how qualified and no sub-surface exploration program, no matter how comprehensive, can reveal what is hidden by earth, rock and time. The actual interface between materials may be far more gradual or abrupt than an assessment indicates. Actual conditions in areas not sampled may differ from predictions. Nothing can be done to prevent the unanticipated, however, steps can be taken to help minimise the impact. For this reason site owners should retain the services of their consultants throughout the development stages of the project in order to identify variances, conduct additional tests that may be necessary and to recommend solutions to problems encountered on site.

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

Environmental Notes continued

STABILITY OF SUB-SURFACE CONDITIONS

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

ENVIRONMENTAL SITE ASSESSMENTS ARE PERFORMED FOR SPECIFIC PURPOSES AND CLIENTS

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

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

MISINTERPRETATION OF ENVIRONMENTAL SITE ASSESSMENTS

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

LOGS SHOULD NOT BE SEPARATED FROM THE REPORT

Borehole and test pit logs are prepared by environmental scientists, engineers or geologists, based upon interpretation of field conditions and laboratory evaluation of field samples. Logs are normally provided in our reports and these would not be redrawn for inclusion in site remediation or other design drawings, as subtle but significant drafting errors or omissions may occur in the transfer process. Photographic reproduction can eliminate this problem, however, contractors can still misinterpret the logs during bid preparation if separated from the text of the assessment. Should this occur, delays and disputes, or unanticipated costs may result.

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

READ RESPONSIBILITY CLAUSES CLOSELY

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