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Additional Pre-Existing Contamination Study

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Executive Summary

For the Executive Summary drawn from the AGL Macquarie Additional Pre-existing Contamination Study (AGLM APECS) report on the Phase 2 Environmental Site Assessment (ESA), completed by ES for the Tomago Development Site (TDS): 15107 TDS APECS - Volume 6 of 7, refer to **15092 AGLM APECS – Volume 1 of 7: Section 9.2; TDS APECS Executive Summary**.

Limitations

Limitations and Important Information about this Report

This report has been prepared in accordance with the scope of services described in the previous sections of this report. The report has been prepared for the sole use of:

- AGL Macquarie Pty Limited (the client) and its related bodies corporate (as defined in the Corporations Act 2001 (Cth) (collectively, the AGL Parties); and
- any person who purchases the land to which this report relates from the AGL Parties; and
- (Relevant Parties) and has been prepared in accordance with a scope of work agreed by the client.

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The results of this assessment are based upon (if undertaken as part of the scope work) a site inspection conducted by ES personnel and/or information from interviews with people who have knowledge of site conditions and/or information provided by regulatory agencies. All conclusions and recommendations regarding the property are the professional opinions of the ES personnel involved with the project, subject to the qualifications made above.

While normal assessments of data reliability have been made, subject to the express terms of any agreement between the client and ES, ES assumes no responsibility or liability for errors in any data obtained from regulatory agencies, statements from sources outside of ES, or developments resulting from situations outside the scope of this project/assessment.

ES is not engaged in environmental auditing and/or reporting of any kind for the purpose of advertising sales promoting, or endorsement of any client's interests, including raising investment capital, recommending investment decisions, or other publicity purposes.

Information relating to soil, groundwater, waste, air or other matrix conditions in this document is considered to be accurate at the date of issue. Surface, subsurface and atmospheric conditions can vary across a particular site or region, which cannot be wholly defined by investigation. As a result, it is unlikely that the results and estimations presented in this report will represent the extremes of conditions within the site that may exist. Subsurface conditions including contaminant concentrations can change in a limited period of time and typically have a high level of spatial heterogeneity.

From a technical perspective, there is a high degree of uncertainty associated with the assessment of subsurface, aquatic and atmospheric environments. They are prone to be heterogeneous, complex environments, in which small subsurface features or changes in geologic conditions or other environmental anomalies can have substantial impact on water, air and chemical movement.

Major uncertainties can also occur with source characterisation, assessment of chemical fate and transport in the environment, assessment of exposure risks and health effects, and remedial action performance. These factors make uncertainty an inherent feature of potentially impacted sites. Technical uncertainties are characteristically several orders of magnitude greater at impacted sites than for other kinds of projects.

In relation the conduct of Asbestos inspections or the preparation of hazardous materials reports ES has conducted inspections and the identification of hazardous material within the constraints presented by the property. Whist efforts are made to access areas not normally accessed during normal use of the site to identify the presence of asbestos or other hazardous material, unless explicitly tested no guarantee can be provided that such material is or is not present.

ES' professional opinions are based upon its professional judgment, experience, and training. These opinions are also based upon data derived from the limited testing and analysis described in this report or reports reviewed. It is possible that additional testing and analysis might produce different results and/or different opinions or other opinions. ES has limited its investigation(s) to the scope agreed upon with its client. ES believes that its opinions are reasonably supported by the testing and analysis that has been undertaken (if any), and that those opinions have been developed according to the professional standard of care for the environmental consulting profession in this area at this time. Other opinions and interpretations may be possible. That standard of care may change and new methods and practices of exploration, testing and analysis may develop in the future, which might produce different results.

Glossary

Abbreviation	Description
ABC	Ambient Background Concentration (NEPM 2013 Sch. B1)
ACL	Added Contaminant Limit (NEPM 2013 Sch. B1)
ACM	Asbestos Containing Material
ADWG	Australian Drinking Water Guidelines
AFFF	Aqueous Film Forming Foams
AGLM	AGL Macquarie Pty Limited
AHD	Australian Height Datum
AIC	Areas of Identified Contamination
AMG	Australian Map Grid
ANZECC	Australian and New Zealand Environment Conservation Council
APECS	Additional Pre-Existing Contamination Study
APHA	American Public Health Association
ARMCANZ	Agriculture and Resource Management Council of Australia and New Zealand
As	Arsenic
AS	Australian Standard
ASLP	Australian Standard Leaching Procedure
ASS	Acid Sulfate Soils
AST	Aboveground Storage Tank
B(a)P	Benzo(a)pyrene
B(a)P TEQ	B(a)P Toxic Equivalence Quotient (NEPM 2013 Sch. B1)
bgl	Below ground level
BTEX	Benzene, Toluene, Ethylbenzene, Xylene
BTEXN	Benzene, Toluene, Ethylbenzene, Xylenes, Naphthalene
btoc	Below top of casing
Cd	Cadmium
CEC	Cation Exchange Capacity
COC	Chain of Custody
CoPC	Contaminant(s) of Potential Concern
Cr	Chromium
Csat	Soil saturation concentration (NEPM 2013 Sch. B1)
CSM	Conceptual Site Model
Cu	Copper

Abbreviation	Description
CVAAS	Cold Vapour Atomic AbsoReportion Spectrometry
DEC	Dept. of Environment & Conservation (now EPA)
DECC	Dept. of Environment & Climate Changed (now EPA)
DECCW	Dept. of Environment, Climate Change and Water (now EPA)
Decon 90	Cleaning agent used to decontaminate equipment during sampling
Depths (m)	Depths have been reported as metres below the ground surface unless noted otherwise.
DO	Dissolved Oxygen
DP	Deposited Plan
DQA	Data Quality Assessment
DQI	Data Quality Indicator(s)
DQO	Data Quality Objective(s)
DSI	Detailed Site Investigation
EC	Electrical Conductivity
Eh	Redox Potential
EIL	Environmental Investigation Level
EMP	Environmental Management Plan
ENM	Excavated Natural Material
EPA	Environmental Protection Authority
ES	Environmental Strategies Pty Ltd
ES LPS APECS Screening Criteria	ES derived LPS APECS Screening Criteria for Salinity in groundwater
ESA	Environmental Site Assessment
ESL	Ecological Screening Level
ESMW	Monitoring Well installed by Environmental Strategies
FA	Fibrous Asbestos
FB	Field Blank (quality control sample)
F1	TRH fraction C6-C10 less BTEX for HSLs
F2	TRH fraction >C10-C16 less Naphthalene for HSLs
F3	TRH fraction >C16-C34
F4	TRH fraction >C34-C40
GAC	Groundwater Assessment Criteria
GCFID	Gas chromatography with flame ionization detector
GCMS	Gas Chromatograph Mass Spectrometer
GIL	Groundwater Investigation Level(s)
GME	Groundwater Monitoring Event
GPR	Ground Penetrating Radar
GSW	General Solid Waste

Abbreviation	Description
GSW (Special Waste)	Asbestos Waste
ha	Hectare (10 000 square metres in area)
Hg	Mercury
HIL	Health Investigation Level
HRA	Health Risk Assessment
HSE	Health Safety and Environment
HSL	Health Screening Level
HW	Hazardous Waste
ICPMS	Inductively coupled plasma mass spectrometry
ID	Identification or inner diameter where referenced to well casing
IL	Investigation Level(s)
IP	Interface Probe (measure in ground oil & water depth
ISQG	Interim Sediment Quality Guidelines
JSA	Job Safety Analysis
km	Kilometre
LCS	Laboratory Control Sample
LL	Lake Liddell
LNAPL	Light Non Aqueous Phase Liquid
LOR	Limit of Reporting
LPS	Liddell Power Station
m	Metre
mbgs	Metres below ground surface
mAHD	Metres Australian Height Datum
MAH	Monocyclic Aromatic Hydrocarbons
mbgl	Metres below ground level
mBTOC	Metres below top of casing (of monitoring well)
MGA	Map Grid of Australia 1994 - Coordinates
mg/kg	Milligrams per kilogram
mg/l	Milligrams per litre
ML	Management Limit for TPH fractions F1-F4 in soil (NEPM 2013)
ml	Millilitres
mm	Millimetres
Ms	MilliSiemens
MS	Matrix Spike or Mass Spectrometry or Mass Spectra
MSD	Matrix Spike Duplicate
MTBE	Methyl-tert Butyl Ether
mV	Milli-Volts

Abbreviation	Description
MW	Monitoring Well
N	Nitrogen
NAPL	Non-Aqueous Phase Liquid(s)
NATA	National Association of Testing Laboratories
NEPC	National Environment Protection Council
NEPM 1999	National Environment Protection (Assessment of Site Contamination) Measure (as made on 10 December 1999)
NEPM 2013	NEPM 1999 incorporating amendment taking effect on 16 May 2013
NHMRC	National Health and Medical Research Council
Ni	Nickel
NL	Non Limiting
NSW	New South Wales
NSW EPA	NSW Environment Protection Authority
NSW OEH	NSW Office of Environment and Heritage
N/A	Not Applicable
OCPs	Organochlorine Pesticides
OPPs	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbon
PARCCS	Precision, Accuracy, Representativeness, Comparability, Completeness, Sensitivity
Pb	Lead
PFAS	Per and Polyfluorinated alkyl substances
PFOA	Perfluorooctanoic acid
PFOS	Perfluorooctane sulfonate
PID	Photo-Ionisation Detector
ppm	Parts per million
PQL	Practical Quantitation Limit
PSI	Preliminary Site Investigation
P&T	Purge and Trap
QA	Quality Assurance
QC	Quality Control
RB	Rinsate Blank (quality control sample)
RPD	Relative Percentage Difference
SAC	Soil Assessment Criteria
SAQP	Sampling and Analysis Quality Plan
SB	Soil Bore
SDAC	Sediment Assessment Criteria
SGS	SGS Australia Pty Ltd

Abbreviation	Description
SSC	Soil Screening Criteria
SWAC	Surface Water Assessment Criteria
SWL	Standing Water Level
TB	Trip Blank
TBA	To be advised
TCLP	Toxicity Characteristic Leaching Procedure
TDS	Tomago Development Site
Tier 1 Soil Vapour Criteria	Generic soil vapour assessment criteria referenced for selected analytes in NEPM 1999 (amendment 2013) Sch. B1
TOC	Total Organic Carbon
Total DS	Total Dissolved Solids
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
UCL	Upper Confidence Level
USCS	Unified Soil Classification System
UST	Underground Storage Tank
UCL	Upper Confidence Limit
uPVC	Unplasticised polyvinyl chloride
USEPA	United States Environmental Protection Agency
USCS	Unified Soil Classification System
UST	Underground Storage Tank
VOC	Volatile Organic Compound
WHS	Work Health and Safety
Xylenes	The sum of ortho- (o-), meta- (m-), and para- (p-) xylenes
Zn	Zinc
µS	Micro Siemens
°C	Degrees Celsius
µg/L	Micrograms per litre

1 Introduction

AGL Macquarie Pty Limited (AGLM) engaged Environmental Strategies Pty Ltd (ES) to complete an Additional Pre-Existing Contamination Study of 1902 Pacific Highway, Tomago, NSW (TDS APECS), for the purposes of identifying Pre-Existing Contamination as at 2 September 2014 (Completion). The property above is referred to as the Tomago Development Site (TDS) by AGLM.

1.1 Definition of Pre-Existing Contamination

For the purpose of this Study 'Pre-Existing Contamination' has been defined to mean:

(a) The presence of any contamination (as defined in the *Contaminated Land Management Act 1997 (NSW)*) in, on, under or emanating from or migrating onto or through the Site (including any soil, groundwater or surface water on or under the Site) or migrating from the Sites onto any land or water body contiguous with the Site, to the extent to which it occurred on or before 2 September 2014; and

(b) Any pollution (as defined in the *Protection of the Environment Operations Act 1997 (NSW)*) of, or emanating from, the Site (including any soil, groundwater or surface water on or under the Site) or harm to the environment resulting from an activity undertaken on the Site prior to 2 September 2014.

The significance of 2 September 2014 is that this is date of completion for the sale and purchase agreement (SPA) under which AGLM acquired the Site/s. This date is referred to in the TDS APECS report as 'Completion'.

For the purpose of discussion within the TDS APECS, the Tomago Development Site is referred to as the 'TDS'.

For the purpose of the definition of Pre-Existing Contamination:

- 'Contamination' means as defined in the Contaminated Land Management Act 1997 (NSW) (CLM Act). The CLM Act defines 'contamination' broadly to mean 'the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment';
- 'Pollution' means as defined in the Protection of the Environment Operations Act 1997 (NSW) (POEO Act). The POEO Act defines 'pollution' to mean each of 'water pollution', 'air pollution', 'noise pollution' or 'land pollution'. Each of these concepts are defined broadly. By way of example:
    - 'water pollution' includes 'placing in or on, or otherwise introducing into or onto, waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, so that the physical, chemical or biological condition of the waters is changed'; and
    - 'waters' is defined very broadly so as to include all surface or ground waters; and
- In the TDS APECS, the TDS is 'the Site'.

Given the breadth of the definitions of 'contamination' and 'pollution', any analysis results showing the presence of any substance above naturally occurring background levels is considered to be 'contamination' or 'pollution' for the purpose of the TDS APECS.

1.2 Background

Tomago is located approximately 20 kilometres north-west of Newcastle, NSW. The TDS is located at 1902 and 1940 Pacific Highway, Tomago NSW.

The TDS (see **Figure 1** and **Figure 2** in **Appendix C**) comprises two sections separated by developed land. The TDS is bounded by the Pacific Highway to the north-west, Tomago Road to the south-west, and Old Punt Road to the east. The TDS is surrounded by the Hunter River floodplain to the north, west and south-west, with dense vegetation to the north-east and east, and commercial/industrial land to the south and south east.

The larger (northern) section of the TDS, identified as TDS-1 for the purposes of this report is predominantly triangular in shape and comprises of all of 1940 Pacific Highway (Lot 3) and the larger section of 1902 Pacific Highway (Lot 2). TDS-1 occupies a total area of approximately 21.2 ha. The north-west boundary is defined by the Pacific Highway, with the western and southern boundaries defined by the properties on Kilroy and Kennington Drives, respectively. The north eastern boundary is parallel to a road, which appears to be the former alignment of the northern section of Old Punt Road. The road is shown by a recent survey (October 2015) to be within the boundary of Lot 3.

The smaller (southern section) of Lot 2, identified as TDS-2in this report, is also triangular in shape with two boundaries defined by the Pacific Highway on the north-west and Tomago Road. The remaining boundary on the eastern side is less clearly defined and backs onto land which is used for residential and commercial purposes on Kilcoy and Martin Drives, some of this land remains vacant. TDS-2 comprises the remaining, undeveloped section of Lot 2, that being the smaller of the two sections. TDS-2 covers an area of approximately 1.6 ha, and is low lying, swampy and heavily vegetated with reeds, long grass, wetland trees and shrubs.

No environmental investigations are known to have been carried out on the TDS prior to the TDS APECS.

As a precursor to this report, ES completed a Phase 1 Preliminary Environmental Site Assessment Report (**Ref. 4**) to identify areas of environmental concern (AEC) and associated chemicals of potential concern (COPC) and a Sampling and Analysis Quality Plan (**Ref.5**) to set the parameters for this report.

1.3 Objectives of the APECS Investigation

The overall objectives of the APECS investigation, of which the TDS APECS formed part, was provided in the *AGLM Specification: Additional Pre-Existing Contamination Study, Bayswater and Liddell Power Stations, April 2015*, (**Ref.)** and were:

- To define to the extent practicable, the nature and extent of contamination on the Site(s) and,
- To make determination whether the contamination was Pre-Existing Contamination.

To this end, this ESA was aimed at:

- identifying areas of environmental concern (AEC);

- Identifying chemicals of potential concern (COPC) associated with each identified AEC; and
- Identifying environmental media and or potential receptors that may be impacted by specific COPC within AECs; and
- Making a determination as to whether the COPC identified was Pre-Existing Contamination.

In order to achieve the objectives of the TDS APECS, the scope of work developed within the *Environmental Strategies - Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Sampling, Analysis and Quality Plan to Identify Pre-Existing Contamination Prepared for AGL Macquarie; 15092RP01_SAQP, June 2015* (**Ref.2**) was designed to:

- Define the nature of, and the lateral and vertical extent of, any contamination; and
- Provide an opinion as to whether contamination identified at TDS is 'Pre-Existing Contamination' as per the definition provided in **Section 1** of this report.

To address the above, the intention of the TDS APECS was to define the nature concentration and vertical and horizontal extent of contamination and/or pollution existing in, on, under or emanating from or migrating onto or through the Site, either at or prior to Completion.

The TDS APECS report which takes the general form of a Phase 2 – Detailed Site Investigation in accordance with the guidance of NSW Environment Protection Authority (EPA) (2000) *Guidelines for Consultants Reporting on Contaminated Sites*(**Ref.3**) is additional and supplementary to the ES (Feb 2015) Phase 1 Preliminary Site Investigation – Tomago Development Site, NSW – Draft Rev.2 report (**Ref.4**).

1.4 Scope of Works

1.4.1 General Scope of Works

The general scope of work carried out in the preparation of this TDS APECS report included the following:

1. Assessment of data gaps and identification of uncertainties and issues that require further investigation to define, to the extent practicable, the nature and extent of contamination on the Site and to make determinations whether the contamination is 'Pre-Existing Contamination';
2. Completion of a Phase 1 Preliminary Site Investigation to identify AECs and the CoPC at the TDS, including a review of their physical and chemical properties;
3. Development of a sampling, analysis and quality plan (SAQP)*Environmental Strategies - Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Sampling, Analysis and Quality Plan to Identify Pre-Existing Contamination Prepared for AGL Macquarie; 15092RP01_SAQP, June 2015* (**Ref.2**), to inform the works, fill identified data gaps and meet the site specific objectives of the *AGLM Specification: Additional Pre-Existing Contamination Study, Bayswater and Liddell Power Stations, April 2015*, (**Ref.1**);
4. *Development of a draft site specific SAQP Environmental Strategies – Tomago Development Site Sampling Analysis and Quality Plan, 15107RP02_Tomago_SAQP, November 2015*(**Ref.5**)*; and*
5. Complete a Stage 2 – Detailed Site Investigation and develop this assessment report.

A copy of the TDS SAQP (**Ref.5**) is provided in **Appendix L**.

2 Site Information

2.1 Site Identification

The location of the Site is shown in **Figure 1, Appendix C**. Details pertaining to the Site are provided in **Table 2.1** below and described in detail in the following sections.

Table 2.1: Summary Site Details

Site Characteristic	Detail
Street Address	1902 and 1940 Pacific Highway, Tomago NSW 2322
Lots / DPs	Lot 2, DP 1043561 Lot 3, DP 1043561
Local Government Area	Port Stephens Council
Land Zoning	Lot 2, DP 1043561 is zoned part Zone E2 – Environmental Conservation (*Port Stephens Local Environment Plan 2013*) and part Zone IN1 – General Industrial (*Port Stephens Local Environment Plan 2013*). Lot 3, DP 1043561 is zoned Zone IN1 – General Industrial (*Port Stephens Local Environment Plan 2013*).
Site Area	Lot 2, DP 1043561 – 11.385ha (9.800ha + 1.585ha) Lot 3, DP 1043561 – 16.670ha
Geographic Coordinates (to approximate centre of site) Projection: GDA94 – NSW Lambert	Lot 2, DP 1043561 – Easting: 9739961.011, Northing: 4538333.110 Lot 2, DP 1043561 – Easting: 9739374.102, Northing: 4538152.525 Lot 3, DP 1043561 – Easting: 9740263.817, Northing: 4538385.466

2.2 Site Description

The current TDS layout is presented in **Figure 2, Appendix C**.

The TDS comprises two parts separated by developed land. The TDS is bounded by the Pacific Highway to the north-west, Tomago Road to the south-west, and Old Punt Road to the east. The TDS is surrounded by the Hunter River floodplain to the north, west and south-west, with dense vegetation to the north-east and east, and commercial/industrial to the south and south east.

The larger (northern) part of the TDS, identified as TDS-1 for the purposes of this report, is predominantly triangular in shape and comprises of all of 1940 Pacific Highway (Lot 3) and the larger part of 1902 Pacific Highway (Lot 2). TDS-1 occupies a total area of approximately 21.2 ha.

The smaller (southern part) of Lot 2, identified as TDS-2 in this report, is also triangular in shape with two boundaries defined by the Pacific Highway on the north-west boundary and Tomago Road on the south-west boundary..

Part of the TDS is currently used for residential purposes with the majority of the property open space. Site improvements observed on TDS-1 are:

- Residential building;

- Two small sheds;
- Two small man-made dams (approximately 15m in diameter each) one in the northern corner of TDS-1 and one centrally adjacent to the southern boundary on TDS-1;
- Land clearing observed predominantly on TDS-1;
- Septic tank north-west of the residential building;
- Stockpiled material adjacent to the alignment of the former section of Old Punt Road;
- Stockpiled material on the boundary of the vacant property located on Kilcoy Drive and TDS-2;
- Established driveway from the residential building to the pacific highway;
- A number of temporary vehicle tracks throughout the TDS-1. One of which leads south-east from the residential property to the former alinement of Old Punt Road; and
- A number of observed groundwater monitoring wells as discussed in Section 2.7.1.

TDS-2 has no observed improvements and predominantly covered with vegetation (mature trees and reed beds) and portions of shallow surface water.

2.3 Surrounding Land-uses

TDS-1 occupies a total area of approximately 21.2 ha. The north-west boundary is defined by the Pacific Highway, with the western and southern boundaries defined by the commercial/industrial properties on Kilroy and Kennington Drives, respectively. The north-eastern boundary is parallel to a road, which appears to be the former alignment of the northern part of Old Punt Road, beyond which is high voltage electrical easement. The road is shown by a recent survey (October 2015) to be within the boundary of Lot 3.

TDS-2 has two boundaries defined by the Pacific Highway on the north-west and Tomago Road to the south-west. The remaining boundary on the eastern side is less clearly defined and backs onto land which is used for residential and commercial purposes on Kilcoy and Martin Drives, some of this land remains vacant.

2.4 Topography

The buildings sit on the crest of a low hill. In relation to the position of the buildings the TDS slopes down towards the western, northern and eastern boundaries, with the gradient steepest towards the western boundary (toward Lot 2). The slope gradient towards the eastern boundary was noticeable, but not steep.

In general, the land immediately to the north and east is higher than the TDS, and forms part of a low, crescent shaped ridge which is predominantly covered with bushland, running from almost the Pacific Highway in the north to Tomago Road in the south.

2.5 Hydrology

The nearest offsite surface water receptor is the Hunter River and does not accept discharge directly from the Site. The regional groundwater flow is likely to be towards the Hunter River.

- An open drain is on the SE alignment of the Pacific Highway which appears to discharge back onto TDS-2. Surface water from TDS-2 appears to discharge from the southern tip directly into a large drainage channel flowing under Tomago Road and into wetland to the west. The large drainage channel appears to receive surface water runoff from most of

the properties on the north-west side of Old Punt Road, including the southern part of TDS-1.

- Visually, the onsite drainage system in the vicinity of the buildings on TDS-1 flows to the man-made dam at the northern end of the TDS.
- On the southern part of TDS-1, the drains appear to direct flow into the overgrown dam adjacent the southern boundary.
- Beyond the boundaries, the Hunter River surrounds the site from the north, west and south with the closest point being approximately 450 m north, on the opposite side of the Pacific Highway. Based on observations made of the overall drainage system of the area it is likely that most of the surface water on the site would eventually be directed south under Tomago Road to the Hunter River.

2.6 Geology

A review of the *Newcastle 1:250,000 Geological Series Sheet S1 56-2 (NSW Department of Mines, 1966)* (**Ref.17**) indicates that a part of the TDS is mapped as Qa – Quaternary gravel, sand, silt, clay, "Waterloo Rock" Marine and freshwater deposits. The majority of the TDS, however, is mapped as Pt – Permian, Tomago Coal Measures, of shale, mudstone, sandstone, tuff and coal.

2.6.1 Strata Encountered

The strata encountered during the TDS APECS were consistent with that described on the Geological Sheet (**Ref. 17**).

Typically, the strata encountered are summarised as poor quality, thin, silty to clayey topsoils, overlaying SILT sand/or silty or sandy CLAY sand CLAYs, above shallow SILTSTONE bedrock, interspersed with CLAY layers.

Fill was not encountered in all locations and where found that fill was present it was encountered to a maximum depth of 0.6 mbgl. Fill generally consisted of SANDs, gravelly and/ or clayey SANDs or CLAY. The fill materials encountered appeared to be mainly reworked natural materials, except for samples collected from stockpiled material, adjacent to the alignment of the former section of Old Punt Road.

The general depths of the strata encountered across the TDS can be summarised as follows:

- ASPHALT: 0.0 – 0.05 mbgl (near the former section of Old Punt Road);
- TOPSOIL: 0.0 – 0.05 mbgl;
- FILL: 0.0 – 0.6 mbgl;
- SILT: 0.05-0.2 mbgl;
- CLAYS, Silty CLAYS, Sandy CLAYS: 0.0->10.0 mbgl;
- SILTSTONE (Bedrock); 0.8 – 10 mbgl.

2.6.2 Acid Sulphate Soils

The TDS has been classified as Class 2, Class 3 and Class 4 on the Acid Sulphate Soils (ASS) Maps in the Port Stephens Local Environmental Plan 2013 and is subject to the provision of Clause 7.1 which detail the restrictions to works within the appropriate Class on the land.

Class 2 encompasses land where development consent is required for works below the natural ground surface, and for works by which the water table is likely to be lowered. Class 3

encompasses land where development consent is required for works more than 1 m below the natural ground surface, works by which the water table is likely to be lowered more than one metre below the natural ground surface. Class 4 encompasses land where development consent is required for works more than 2 m below the natural ground surface, works by which the water table is likely to be lowered more than 2 m below the natural ground surface.

2.7 Hydrogeology

An online search of NSW Department of Primary Industry: Office of Water Database of Registered Groundwater Wells, formerly known as the National Resources Atlas (**Ref.18**) revealed a total of four registered groundwater bores within an approximate 500 m radius of the TDS. No details were available as to the construction or purpose of the bores. A summary of these groundwater bores is presented in **Table 2.2.**

Table 2.2: Summary of registered groundwater bores

Works number	GDA94 Easting	GDA94 Northing	Distance from Site (m approx.)
GW079605	378090.0	6368487.0	150 (nth of Lot 2 - small part)
GW079591	379370.0	6369241.0	300 (NW of Lot 3)
GW079412	379499.0	6369390.0	500 (NW of Lot 3)
GW201068	379505.0	6367870.0	500 (SE of Lot 2 - large part)

Of the groundwater bores listed above only one, GW079605, could be considered to be down-gradient of the TDS, and to therefore represent a potential receptor. Based on the topography, the other three bores appear to be cross-gradient, and so are not likely to be representative of groundwater coming onto or leaving the TDS.

2.7.1 Onsite Groundwater Wells

One existing groundwater monitoring well was located on the TDS during the PESA. This groundwater monitoring well was not identified on the search for registered groundwater bores. The well was uncapped and did not have any identification marks present. This well was not sampled or gauged as part of the TDS APECS since there was insufficient knowledge of construction details and quality of the data obtained from it may have been influenced by potential cross-contamination. A total of 10 monitoring wells were constructed at critical locations on the site to define the site geology and hydrogeology at depths ranging from shallow bedrock refusal at ~2 mbgl through to a depth of 15.6 mbgl (T_5_ESMW05), which was drilled almost 8 metres into the siltstone bedrock in an attempt to encounter saturation.

Drilling encountered very little water entry. In fact, borelogs show that whilst moist and even damp descriptions were recorded by the ES field team, there was insufficient water to directly record an accurate water strike.

In addition, standing water level data were not included on the monitoring well logs since there was no observable water measured within an hour after installation.

During development, purging and sampling approximately two weeks after drilling towards the end of November, 2015, the developing volumes, were consistent with low levels of water entry and low permeability, as found during drilling activities.

The geology is dominated by shallow bedrock which ranges in depth from 2 mbgl along the south-eastern boundary, to greater than 6 mbgl at monitoring well T_ES_MW09, where a

groundwater mound was mapped during water level gauging at the end of November, during heavy rainfall over that period.

The overlying Quaternary alluvium is dominated by clay fraction material with minor sandy and silty material which surprisingly does not contain any significant water bearing zones. ES consider that there is a low effective permeability due to the low permeability with the majority of water encountered just above the bedrock surface. ES anticipates that some confining response exists between potential saturation just above the bedrock and the final water levels which are above this zone.

Groundwater elevations were surveyed to Australian Height Datum and the resultant groundwater contours are provided at **Appendix C (Figure 3**).

A groundwater mound was observed from the data and a groundwater divide resulted in differential flow both west south west and north east from the mound. Given ES' understanding of the low hydraulic conductivity (0.1 m per day) and a hydraulic gradient ranging from $1.4x\ 10^{-2}$ to $1.35x10^{-2}$, a seepage velocity of about 2 metres per annum is indicated.

2.8 Sensitive Environments

Potential receiving environments and/or environmental receptors observed during the Phase 1 PESA walkover inspection were:

- Potential groundwater users in the vicinity of the TDS;
- Aquifers beneath the TDS and potential potable water wells;
- Tenants and visitors to the residence on the TDS;
- Occupiers and tenants of Commercial/industrial buildings to the south and between Lot 2 and Lot 3;
- Ecological receptors including:
- Stands of trees (designated in the Port Stephen Local Environment Plan 2013 (Ref.21) and the Port Stephens Council Comprehensive Koala Plan of Management (CKPoM), June 2002 (Ref.20)) as Supplementary Koala Habitat to the immediate north-east of the TDS; and
- Brackish water ecological receptors in the Hunter River to the north, west and south of the TDS between which are wetlands and stands of mangrove.

2.9 Proposed Landuse

The proposed land use for the TDS has not yet been confirmed by AGLM.

The TDS is currently zoned:

- Part Zone E2 – Environmental Conservation (Port Stephens Local Environmental Plan 2013), (Ref.21).
- Part Zone IN1 – General Industrial (Port Stephens Local Environmental Plan 2013), (Ref.21)

The description of the zoning from the *Port Stephens Local Environment Plan 2006* (LEP 2013), (**Ref.21**) is presented below:

2.9.1 Zone E2 – Environmental Conservation

2.9.1.1 Objectives of zone

- *To protect, manage and restore areas of high ecological, scientific, cultural or aesthetic values.*
- *To prevent development that could destroy, damage or otherwise have an adverse effect on those values.*

2.9.1.2 Permitted without consent

Bee keeping; Environmental protection works; Home occupations.

2.9.1.3 Permitted with consent

Bed and breakfast accommodation; Building identification signs; Business identification signs; Dual occupancies; Dwelling houses; Eco-tourist facilities; Environmental facilities; Flood mitigation works; Home-based child care; Home businesses; Information and education facilities; Recreation areas; Research stations; Roads; Water recreation structures; Water supply systems.

2.9.1.4 Prohibited

Business premises; Hotel or motel accommodation, Industries; Multi dwelling housing; Recreation facilities (major); Residential flat buildings; Restricted premises; Retail premises; Seniors housing; Service stations; Warehouse or distribution centres; Water treatment facilities; Any other development not specified in item 2 or 3 [being development permitted without consent or with consent].

2.9.2 Zone IN1 – General Industrial

2.9.2.1 Objectives of zone

- *To provide a wide range of industrial and warehouse land uses.*
- *To encourage employment opportunities.*
- *To minimise any adverse effect of industry on other land uses.*
- *To support and protect industrial land for industrial uses.*

2.9.2.2 Permitted without consent

Nil.

2.9.2.3 Permitted with consent

Airstrips; Boat building and repair facilities; Boat launching ramps; Boat sheds; Correctional centres; Crematoria; Depots; Environmental facilities; Environmental protection works; Flood mitigation works; Freight transport facilities; Garden centres; General industries; Hardware and building supplies; Heavy industrial storage establishments; Heavy industries; Helipads; Heliports; Highway service centres; Industrial retail outlets; Industrial training facilities; Jetties; Landscaping material supplies; Light industries; Mortuaries; Neighbourhood shops; Plant nurseries; Port facilities; Research stations; Restricted premises; Roads; Rural supplies; Sawmill or log processing works; Service stations; Sex services premises; Signage; Stock and sale yards; Timber yards; Transport depots; Truck depots; Vehicle body repair workshops; Vehicle repair stations; Warehouse or distribution centres; Water supply systems; Wharf or boating facilities; Wholesale supplies.

2.9.2.4 Prohibited

Any development not specified in item 2 or 3 [being development permitted without consent or with consent].

3 Findings of Preliminary Assessment

The following section provides a summary of the findings of the completion of the PESA (**Ref.4**)

3.1 Identification of Areas of Environmental Concern

Based on the historical review and field observations, a number of areas of environmental concern (AECs) were identified across the TDS. The AECs were assessed as having potential to have been impacted from the following potential sources:

- Storage and use of quantities of various chemicals in areas with no observed bunding (TDS-1);
- Fill mounds observed both on and adjacent to the site (TDS-2) from an unknown source and composition;
- Septic systems on site (TDS-1);
- Possible fuel and oil leaks from abandoned motor vehicles (TDS-1);
- Areas of dumping what appears to be various car parts, and potential asbestos containing material (TDS-1 and 2, respectively);
- Residential dwelling with eaves of potential asbestos containing material, and flaking paint that has potential to be lead based (TDS-1); and
- Air and water borne impacts from surrounding industrial development, in particular Tomago Aluminium Smelter (TDS-1 and 2).

The AECs identified on the TDS and investigated as part of this intrusive assessment are as follows:

- AEC 1: Septic tank on TDS-1;
- AEC 2: Residential compound (which included the residential property and sheds on TDS-1);
- AEC 3: Abandoned motor vehicles on TDS-1;
- AEC 4: Stockpiled material/mounds on TDS-1;
- AEC 5: Dumped waste/stockpiled material adjacent to the alignment of the former section of Old Punt Road on TDS-1;
- AEC 6: Dam and stockpiled material at TDS-1; and
- AEC 7: Stockpiled material on the boundary of the vacant property located on Kilcoy Drive and TDS-2.

3.2 Refer to Figure 2, Appendix C for the locations of the AECs identified at the TDS.Conclusion

Based on the PESA, including field observations, it was considered likely that the previous uses of the Site could have resulted in localised contamination of near-surface soils. Potential also exists for localised asbestos impacts in the vicinity of the fill mounds on the eastern boundary of TDS-2. The PESA concluded that further intrusive assessment would be required to confirm these opinions and quantify any risk associated with confirmed impacts.

3.3 Recommendations

The PESA recommended an intrusive Phase 2 ESA should be completed of the TDS to further assess any potential impacts within the respective AECs. Based on the Phase 1 ESA findings, the Phase 2 ESA should investigate potential impacts from some, or all of the following contaminants of potential concern (CoPC), as relevant to the respective AECs:

- Total recoverable hydrocarbons (TRH);
- Fluoride;
- Faecal and Total Coliforms (F&TC);
- E Coli;
- Volatile Organic Compounds (VOCs);
- BTEX (benzene, toluene, ethyl benzene, xylene);
- Volatile Organic Compounds;
- 8 priority metals (Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Zinc (Zn));
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides (OCP);
- Organophosphorus pesticides (OPP);
- Polychlorinated biphenyls (PCBs); and
- Asbestos.

In addition to the above, the contents of fill mounds on and immediately adjacent to the eastern boundary of TDS-2 are unknown and may contain other CoPC. The PESA concluded that these would need to be assessed by intrusive investigation during the Phase 2 ESA.

The PESA also concluded that Acid Sulphate Soil (ASS) potential of the soils encountered may potentially require further assessment once any specific development plans for the TDS are finalised.

4 Sampling and Analysis Plan and Investigation Methodology

This section outlines the methodology adopted by ES during the works conducted as part of the TDS APECS. Specifically, this section summarises the relevant sections of the ES SAQPs (**Ref.2** and **5**) which were prepared to inform the works required to meet the project objectives as stated in **Section 1.2** of this report.

4.1 Data Quality Objectives (DQO)

The DQO process is a systematic planning tool based on the scientific method for establishing criteria for data quality and for developing data collection designs. The DQO defines the experimental process required to test a hypothesis. The DQO process has been developed to ensure that efforts relating to data collection are cost effective, by eliminating unnecessary, duplicative or overly precise data whilst at the same time, ensuring the data collected is of sufficient quality and quantity to support defensible decision making.

It is recognised that the most efficient way to accomplish these goals is to establish criteria for defensible decision-making before data collection begins and develop a data collection design based on these criteria. By using the DQO process to plan the investigation effort, the relevant parties can improve the effectiveness, efficiency and defensibility of a decision in a resource and cost effective manner.

The DQO process consists of seven steps, which are designed to clarify the TDS APECS objectives, define the appropriate type of data and specify tolerable levels of potential decision errors. The seven-step DQO process adopted for the TDSS APECS can be summarised as:

- **Step 1:** State the Problem – concisely describe the problem to be studied. Review prior studies and existing information to gain a sufficient understanding to define the problem.
- **Step 2:** Identify the Decision – identify what questions the TDS APECS will attempt to resolve, and what actions may result.
- **Step 3:** Identify the Inputs to the Decision – identify the information that needs to be obtained and the measurements that need to be taken to resolve the decision statement.
- **Step 4:** Define the TDS APECS Boundaries – specify the time periods and spatial area to which decisions will apply. Determine when and where data should be collected.
- **Step 5:** Develop a Decision Rule – define the statistical parameter of interest, specify the action level, and integrate the previous DQO outputs into a single statement that describes the logical basis for choosing among alternative actions.
- **Step 6:** Specify Tolerable Limits on Decision Errors – define the decision maker's tolerable decision error rates1 based on a consideration of the consequences of making an incorrect decision.
- **Step 7:** Optimise the Design –evaluate information from the previous steps and generate alternative data collection designs. Choose the most resource-effective design that meets all DQOs.

DQOs have been developed to detail the type of data that is needed to meet the overall objectives of this project. The DQOs presented in this TDS APECS have been developed consistent with the following published guidance:

- National Environment Protection Council (1999) National Environmental Protection Measure 1999 as amended 2013 – Assessment of Site Contamination. Schedule B(2) Guideline on Site Characterisation (NEPC 2013) (**Ref.6**);

- NSW DECC (2006) Guidelines for the NSW Site Auditor Scheme (2nd Edition) (**Ref.7**);
- NSW EPA (1995) Sampling Design Guidelines (**Ref.8**);
- NSW EPA (2000) Guidelines for Consultants Reporting on Contaminated Sites (**Ref.9**); and
- Australian/New Zealand Standard, AN/NZS 4360:2004, *Risk Management – Principles and guidelines (***Ref.10***)*.

Full details of the DQOs developed for the TDS APECS are provided in the ES SAQPs (**Ref.2** and **5**) in **Appendix L**.

4.2 Quality Assurance and Quality Control

To assess the achievement of the project DQO, data quality indicators (DQIs), precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS), are employed. The DQIs are defined as follows:

- Precision is a measure of the agreement between duplicate or replicate samples.
- Accuracy is a measure of the agreement between an experimental determination and the true values of the parameter being measured.
- Representativeness is a measure of how closely the measured results reflect the actual concentration or distribution of the chemical constituent in the sample of each environmental medium.
- Comparability is a qualitative assessment made to express the confidence with which one data set may be compared with another.
- Completeness is a quantitative measure defined as the percentage of total measurements made that are judged to be valid compared to the total number of measurements that were proposed to be made.
- Sensitivity refers to the capability of a method or instrument to detect a given analyte at a given concentration and reliably quantify the analyte at that concentration.

DQIs are used to assess the achievement of both field and laboratory procedures, in accordance with the requirements of NSW DECC (2006) and NEPC (2013).

The field QA/QC program set out in the SAQP (**Ref.7**) required the fieldwork carried out in support of the TDS APECS to be conducted in accordance with the requirements of NEPC (2013), Australian Standard AS4482.1-2005 to measure the precision of the field and laboratory analyses and to determine the accuracy of the analytical results. All samples were analysed by NATA accredited laboratories. Field QA complies with appropriate standard operating procedures. Results of the field QA/QA programme are provided in **Section 11** of this report.

The laboratory QA/QC program set out in this SAQP requires chemical analyses to be conducted by laboratories in accordance with the registration of analytical methods provided by the National Association of Testing Authorities Australia (NATA). Results of the laboratory QA/QA programme are provided in **Section 12** of this report.

Full details of the DQIs adopted for the TDS APECS are provided in the ES SAQP (**Ref.7**).

4.3 Contaminants of Potential Concern

Based on previous environmental investigation data and known historical site operations, the potential contaminants of potential concern (COPCs) set out below were identified on the TDS:

- Total recoverable hydrocarbons (TRH);
- Fluoride;
- Faecal and Total Coliforms (F&TC);
- E Coli;
- Volatile Organic Compounds (VOCs);
- BTEX (benzene, toluene, ethyl benzene, xylene);
- Volatile Organic Compounds;
- 8 priority metals (Arsenic (As), Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Zinc (Zn));
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides (OCP);
- Organophosphorus pesticides (OPP);
- Polychlorinated biphenyls (PCBs); and
- Asbestos.

5 Environment Protection Licence (EPL)

The TDS is used for residential purposes and does not hold an EPL. ES understands through discussions with AGLM that there is no current plan to use the TDS for any purpose which would require an EPL.

6 Assessment Criteria

The assessment criteria adopted by ES for the TDS APECS are in accordance with the latest regulatory guidelines.

6.1 Adopted Criteria

6.1.1 Soil

The adopted soil assessment criteria (SAC) for the TDS APECS were adopted based on (**Ref.6**):

- NEPC (2013) *Health Investigation Levels (Soil HIL-A)* residential landuse (based on part of the current TDS-1 site use as a residential property);
- NEPC (2013) *Health Investigation Levels (Soil HIL-C)* Recreational landuse (based on the current TDS-1 and TDS-2 open space landuse);
- NEPC (2013) Health Screening Levels (HSL-A) Residential and (HSL-C) Recreational for soil.
- NEPC (2013) Management Limits for TPH fractions F1-F4 in soil; and
- NEPC (2013) Ecological Screening Levels (*ESLs)* commercial/industrial land-use and, urban residential and open space.
- NSW EPA (2014) Waste Classification Guidelines (**Ref.16**)

Soil analytical results compared to the SAC are presented in **Appendix D.**

6.1.2 Groundwater

The adopted groundwater assessment criteria (GAC) for the TDS APECS were adopted based on:

- NEPC (2013) Groundwater Investigation Levels (GILs) (**Ref.6**)
    - NEPM 2013 B1 Table 1C GILs, Fresh Waters(A);
    - NEPM 2013 B1 Table 1C GILs, Marine Waters(A);
    - NEPM 2013 B1 Table 1C GILs, Drinking Water(B);
- NHMRC (2011) Australian Drinking Water Guidelines (**Ref.19**)
    - Chapter 5 – Microbial Quality of Drinking Water

Groundwater analytical results compared to the GAC are presented in **Appendix D.**

6.1.3 Sediment

The sediment assessment criteria (SDAC) adopted for the TDS APECS were from;

- Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) Interim Sediment Quality Guideline Trigger Values (**Ref.16**).

Sediment analytical results compared to the SDAC are presented in **Appendix D.**

6.1.4 Surface Water

The surface water analytical results obtained during the LL APECS have been assessed against criteria from the following guidelines:

- Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) Australian New Zealand Australian and New Zealand Guidelines for Fresh and Marine Water Quality 95% Level of Protection Trigger Values for Fresh Water (Reference Table 3.4.1, ANZECC 2000 Trigger Values for toxicants at alternative levels of protection which

are applicable to slightly–moderately disturbed systems.),(herein after defined as ANZECC (2000) FW) (**Ref.25**).

- Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) Guidelines (**Ref.11**) for primary contact recreational water quality and aesthetics (herein after defined as ANZECC (2000) Recreational).

Surface water analytical results compared to the adopted SWAC are presented in **Appendix D**.

6.2 Rationale for and Appropriateness of the Selection of Criteria

6.2.1 Soil

The SAC adopted are based on the latest regulatory guidelines and current understanding of the assumed continued use of the site for residential land and/or as recreational or open space, with potential sensitive ecological receptors. The soil criteria adopted are considered appropriate given the varied settings and use of the areas comprising TDS. These SAC are acknowledged to be more sensitive than the zoning for the largest portion of the TDS which is zoned General Industrial and would normally be compared to Commercial / Industrial (HIL/HSL D) (**Ref.6**). However, an occupied residence is present on TDS-1 and, in consideration of this sensitive use of TDS-1, comparison is also made to HIL-A levels. The area around the residential building and associated sheds (AEC 2)at the TDS is not segregated by any barrier from the remainder of the Site and from observation it appears that the portion of TDS-1 which does not contain the residence is subject to access by the residents and or visitors for recreational purposes.

Soil acceptance criteria are based on Health–based investigation levels (HILs). This is a Tier 1 risk assessment approach, which is consistent with the requirements of Schedule B4 of the NEPM (2013), (**Ref.6**). Section 2.4.1.1 of Schedule B4 describes the Tier 1 risk assessment approach as:

> *The Tier 1 (or screening level) assessment is the first stage of assessment at the site. It includes a comparison of known site data with published risk-based guidance levels, such as the HILs. The assessment provides an initial screening of the data to determine whether further assessment is required. HILs are Tier 1 guidance values which are designed to avoid significant risk to most exposed populations under a variety of circumstances (that should be understood). Exceedance of Tier 1 criteria is generally used to define the contaminants that require assessment at Tier 2. An assessment of the significance of exceedances may be necessary where they are marginal or present over a limited area. Where further assessment of contaminants exceeding Tier 1 criteria is not proposed, a clear and transparent explanation should be provided. A Tier 1, screening level, assessment is often bypassed where there are no appropriate risk-based guidance levels (including HILs).*

6.2.2 Groundwater

The GAC adopted are based on the latest regulatory guidelines and current understanding of the assumed continued use of the site for commercial/industrial purposes. Groundwater will also be assessed for potential for human consumption and for recreational activities as well as the protection of the environmental values. The groundwater criteria adopted are considered appropriate given the settings and use of the areas comprising TDS.

Although the TDS is supplied with potable water (town water supply) and there are no registered bores within 500 m of the TDS, ES have needed to consider the most sensitive

potential use of water on the site. As the TDS is a semi-rural property and houses a residence, it cannot be discounted that groundwater abstraction for the purpose of either direct or indirect consumption could occur in the future and or has occurred in the past.

6.2.3 Sediment

The SDAC adopted are based on the latest regulatory guidelines. Sediments, have unique physicochemical properties and need to be assessed separately to soils. The sediment criteria adopted are considered appropriate given the setting and use of TDS.

6.2.4 Surface Water

The SWAC adopted are based on the latest regulatory guidelines. Surface, waters which are commonly the receiving bodies for contamination are assessed on criteria based on the level of protection for aquatic fauna, rather than health considerations. The surface water criteria used are considered appropriate given the surface water bodies sampled at TDS are all potential or actual receptors.

7 Sampling Programme

This section summarises the strategy for the sampling and analysis programme adopted for the TDS APECS as developed within the ES SAQP (**Ref.5**) **Appendix L**. The programme was developed in accordance with:

- The National Environment Protection (Assessment of Site Contamination) Measure 1999 as amended in 2013 (NEPC, 2013) (**Ref.6**);
- NSW Site Auditor Scheme (**Ref.7**);
- The NSW EPA Sampling Design Guidelines (NSW EPA, 1995), (**Ref.8**) and
- The Guidelines for Consultants Reporting on Contaminated Sites (**Ref.9**).

7.1 Sampling Programme

Following on from the findings of the PESA (**Ref.4**), ES developed a specific programme of sampling for the TDS APECS. The sampling design adopted for the TDS APECS was designed to meet the project objectives while at the same time minimising potential for sample or measurement errors. The sampling design was used to guide development of the ES SAQP (Ref.5). The sampling programme adopted was based on the conceptual site model (CSM) developed within the ES SAQP (Ref.5). Sampling locations were determined by ES employing professional judgement and based on the results of the Phase 1 PESA (**Ref.4**). The proposed sampling locations were included in figures provided within the ES SAQP (**Ref.5**), and were reviewed by and agreed with, the AGLM Technical Advisor for the TDS APECS, prior to commencement of sampling. A summary of the CSM is provided in **Table 7.1**. Note that **Table 7.1** provides a summary of the CSM that was used to develop the strategy adopted for sampling completed. The sampling programme was carried out in accordance with technical procedures outlined in this section.

Table 7.1: CSM Tomago Development Site

AEC	Sampling Location Name	Sample Type	Rationale
AEC 1: Septic Tanks.	T_MW01	Soil bore/ Groundwater monitoring well	Located downgradient of an observed septic tank
AEC 2: Residential Compound.	T_MW02	Soil bore/ Groundwater monitoring well	Located in the immediate vicinity of where un-bunded fuels, oils and other chemicals were observed to be stored
	T_SB01	Soil bore	To provide further site coverage on AEC 2
	T_SB02	Soil bore	Located in the immediate vicinity of where un-bunded fuels, oils and other chemicals were observed to be stored.
AEC 3: Abandoned Motor Vehicles.	T_MW03	Soil bore	Located in the immediate vicinity of where abandoned, demolished and burnt out motor vehicles were observed.
AEC 5: Dumped waste	T_MW04	Soil bore/ Groundwater	Located on the likely down-gradient northern boundary of the site to

AEC	Sampling Location Name	Sample Type	Rationale
(including potential ACM).		monitoring well	measure concentrations of groundwater migrating offsite. Also located on AEC 5 where waste dumping was observed.
	T_MW05	Soil bore/ Groundwater monitoring well	Located on the eastern boundary of the site within AEC 5. Placed in a location in the vicinity of dumped waste materials.
	T_MW06	Soil bore/ Groundwater monitoring well	Located on the south-eastern boundary of the site within AEC 5. Placed in a location in the vicinity of dumped waste materials.
	T_SB03	Soil bore	Placed in a location in the vicinity of observed dumped waste materials.
	T_SB04	Soil bore	Placed in a location in the vicinity of observed dumped waste materials.
Background Areas	T_MW07	Soil bore/ Groundwater monitoring well	Placed on the south-western boundary of TDS 1 to measure groundwater concentrations either entering or exiting the site (dependent on groundwater flow direction).
	T_MW08	Soil bore/ Groundwater monitoring well	Placed on the North-western boundary of TDS 1 to measure groundwater concentrations either entering or exiting the site (dependent on groundwater flow direction).
	T_MW09	Soil bore/ Groundwater monitoring well	Placed in the centre of TDS 1 to provide further site coverage and aid in the determination of groundwater flow direction.
	T_MW10	Soil bore/ Groundwater monitoring well	Placed on TDS 1 to provide further site coverage and aid in the determination of groundwater flow direction.
	T_SB05	Soil bore	Placed on TDS 1 to provide further site coverage in areas observed to be cleared of vegetation.
	T_SB06	Soil bore	Placed on TDS 1 to provide further site coverage in areas observed to be cleared of vegetation.
	T_SB07	Hand auger	Placed on the north eastern boundary of TDS 2 to provide site coverage in areas of cleared vegetation / access.
	T_SB08	Hand auger	Placed in the centre of TDS 2 to provide site coverage in areas of cleared vegetation / access.

AEC	Sampling Location Name	Sample Type	Rationale
	T_SB09	Hand auger	Placed on the south western boundary of TDS 2 to provide site coverage in areas of cleared vegetation / access.
	T_SB10	Hand auger	Placed on the southern boundary of TDS 2 to provide site coverage and delineate observed stockpiles on the western boundary, in areas of cleared vegetation / access.

ES Fieldworks carried out as part of the TDS APECS were completed between 10 November 2015 and 15 December 2015.

8 Sampling Methodology

8.1 Service Location

The locations of proposed bores and were determined using professional judgement by a senior ES scientist/engineer during a site walkover inspection, and in consideration of the results reported in the PESA (**Ref.4**).

Prior to commencing intrusive investigations, diagrams of underground services from the dial before you dig (DBYD) database were reviewed.

A certified underground service locator was contracted to perform electromagnetic scanning and Ground Penetrating Radar (GPR) survey for the purpose of clearing drilling locations of infrastructure and subsurface structures.

Where any doubt relating to the possible presence of underground services occurred, a hand auger was used to a nominal depth of 1 mbgl, or natural material was encountered, which occurred first. Where the hand auger was not able to penetrate due to the nature and/or density of the strata encountered, more rigorous means of hand clearance, such as use of a bar was used to clear to the desired depth.

For information regarding the experience of ES field staff and adherence to SOPs refer to the fieldwork elements of the PARCCS review provided in **Appendix J.**

8.2 Completion of Boreholes

Boreholes were advanced using either a truck-mounted or track-mounted drill rig. The type of rig employed was dependent on the accessibility of the various AECs on the TDS at the time of the investigation. Both types of rig employed split tube samplers in order to collect undisturbed samples. Where split tube samplers could not be advanced due to the nature of the strata encountered, samples were collected directly from the rig augers. In this instance efforts were made to minimise disturbance of the material being sampled to the extent practicable. Such techniques included significantly reducing the rotational speed of the augers as the target sampling depth was being approached, sampling only from the bottom of the auger and scraping away the outside layer of material, to prevent cross-contamination and minimise the potential for loss of VOCs.

Soil bores were extended to a maximum depth of 3 m below surface level or, at least 0.5 m into natural material or, to refusal, whichever was shallower.

Some low-lying areas of the TDS could not be accessed even with a track-mounted rig due to the presence of heavy vegetation and surface water. This was particularly applicable to TDS-2. In such instances the area targeted was accessed on foot and the bore advanced with a hand auger.

Three (3) or more soil samples were collected from each borehole and test pit with two (2) selected samples submitted for chemical analysis. The remaining samples were held on ice in a secured container for potential additional analysis. Soil sampling intervals were typically:

1. One sample collected in the fill (if encountered);
2. One sample collected in the natural material;
3. Additional sample/s collected on the basis of field observations, evidence of staining or olfactory indicators; and
4. Additional sample/s collected at changes in the strata, particularly targeting the interface between fill and natural material.

Soil samples collected for chemical analysis were screened in the field for Volatile Organic Compounds (VOCs) using a Photo Ionisation Detector (PID). The PID was calibrated at the start and end of each day of use. Calibration records for the PID are provided in **Appendix K**.

The locations of bores and monitoring wells were surveyed using a differential GPS unit and located relative to Australia Map Grid (AMG).

8.3 Reinstatement

Surplus materials generated during installation of soil bores were replaced into the bores in reverse order of excavation and compacted by several traverses of the drill rig.

Grass or other plants that were disturbed during the intrusive works, were replaced at the surface of the location, to the extent practicable.

8.4 Storage of Waste

Groundwater generated during development and purging of wells was collected in clearly labelled plastic drums fitted with screw top lids and stored on site pending further instruction from AGLM.

Other waste generated during the works, such as PVC off cuts, used nitrile gloves and empty sand and bentonite bags were collected and disposed of to the nearest licenced landfill facility.

8.5 Nomenclature for Test Locations and Sample Identification

Test locations and samples collected were identified as per the requirements of the AGLM Specification for the TDS APECS (**Ref.2**) as adopted by the ES SAQP (**Ref.5**), in **Appendix L**.

8.6 Soil Logging and Sampling

Soil sampling was conducted during bore advancement with the soil type/s described in general accordance with the Unified Soil Classification System (USCS). A detailed log was completed at each location. Logs included the information required by the ES SAQP (**Ref.5**), in **Appendix L** as follows:

- Fill materials, including the presence or absence of indicators of contamination, such as presence of chemical odours, unusual staining, anthropogenic materials, including asbestos-containing materials;
- Natural soils according to the USCS classification;
- Presence or absence of moisture;
- Salt deposits;
- Dead or stressed vegetation;
- Staining; or
- Anthropogenic materials.

During the works, samples were collected using single-use, disposable nitrile gloves. The gloves were replaced between each sample collected.

The split tube sampler and/or hand augur was thoroughly decontaminated between sampling events by washing with a phosphate free detergent (Decon 90®) and rinsing with potable water.

Excess soil was brushed from the drill augers and the augers washed down with potable water using a high pressure gurney between sampling locations. Material which was brushed from the augers was collected and reinstated as per **Section 8.3**.

Soil samples were subdivided with one part being put into snap-lock plastic bags for screening with the PID and the other being placed into a laboratory prepared 250 ml glass jar with Teflon® lined lids.

Unless stated within this section, the identification, preservation, handling and transportation of soil samples collected during the TDS APECS was in general accordance with the requirements of the ES SAQP (**Ref.5**), in **Appendix L** and **Section 8.8** of this document.

8.7 Groundwater Sampling

8.7.1 Locations of new groundwater monitoring wells

The locations of new groundwater monitoring wells installed as part of the TDS APECS were determined within the ES SAQP (**Ref.5**) following review of the preliminary assessment (**Ref.4**). Once on site the locations were finally located using professional judgement by a senior ES scientist during a site walkover inspection and in consideration of the position of services and utilities.

The locations of the wells installed as part of the TDS APECS are shown on **Figure 3**, in **Appendix C**.

8.7.2 Well Construction and Materials

Soil bores which were to be converted into groundwater wells were extended to a maximum depth of 15 mbgl, or to a nominal depth of 2 m beyond the depth at which an aquifer was encountered, whichever occurred first.

The groundwater monitoring well screens comprised 50 mm ID, Class 18, threaded, flush jointed uPVC with machined slots of 0.5 mm width. Casing for the wells comprise 50 mm ID, Class 18, threaded, flush jointed uPVC. Screen and casing were joined using Viton™ O-rings which are chemically resistant to petroleum hydrocarbons and chlorinated solvents.

Screened sections of monitoring wells were constructed so as to be positioned both above and below the encountered groundwater level, to enable light non-aqueous phase liquids (LNAPL), if present, to enter the monitoring well.

If confined conditions were encountered (the static water level is above the depth of water entry) consideration was given to inserting shorter screens as the behaviour of LNAPL in confined groundwater is different from unconfined groundwater, thus requiring different design considerations.

The well annulus was packed with washed, 1-2mm graded gravel to approximately 0.5m above the top of the screen interval. This was followed by a cement/bentonite seal installed above the gravel pack to just below the ground surface.

Details of well construction are included on the bore logs provided in **Appendix E**.

Top of casing of the newly installed groundwater monitoring wells was surveyed using a differential GPS relative to Australia Map Grid (AMG) and elevations measured relative to Australian Height Datum (AHD). Survey measurements are provided in **Appendix G.**

Monitoring wells, installed within parts of the TDS where pavements were present or where evidence suggested that the area is subject to regular traffic, were fitted with a flush-mounted cast iron road box using concrete or asphaltic cement products, and constructed to

prevent surface water from entering wells. Wells installed within garden areas and non-trafficked areas of the site were finished with the top of the well sticking up at least 300mm above the level of the surrounding ground level.

The monitoring well identification number was engraved on an aluminium tag attached to the well caps.

8.7.3 Well Development and Groundwater Sampling

Methods and standards set out in the following guidance documents were adopted in the ES SAQP (**Ref.5**) for the purposes of groundwater development and sampling:

- NSW DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination (**Ref.13**);
- VIC EPA (2006) Publication 668, Hydrogeological Assessment (Groundwater Quality) Guidelines (**Ref.14**); and
- VIC EPA (2000) Publication 669, Groundwater Sampling Guidelines (**Ref.15**).

In all cases the works completed were guided by the requirements of guidelines made or endorsed by NSW EPA in preference to the VIC EPA documents above. Whilst it is acknowledged that the Victorian EPA guidelines have no legislative standing in NSW, adoption of general guidance from these documents provided an additional reference to industry best practice.

Development of the newly-installed monitoring wells was conducted using a combination of stainless steel bailer and/or a 12 v submersible pump, depending on the nature and depth of the aquifer encountered. The stainless-steel bailer and/or pump were cleaned with a Decon 90® wash mixture and rinsed with potable water between each monitoring well. To the extent practicable each well was developed until the majority of sediment was removed to ensure a good connection between the screened borehole interval and the surrounding aquifer. Well development occurred within 48 hours of monitoring well installation.

Sampling from wells took place a minimum of 5 days following development.

Prior to sampling, and following removal of the well cap, the headspace of each well (including the existing ERM monitoring wells) was immediately screened with a PID to determine the likely presence, or otherwise, of VOCs. Following well headspace screening, wells were gauged with an interface water level meter to determine depth to water below top of casing and the presence, or otherwise, of LNAPL or dense non aqueous phase liquids (DNAPL). If the interface meter detected either LNAPL or DNAPL, the thickness was recorded and the presence confirmed with a dedicated Teflon lined clear bailer.

Records of NAPL detection are on the field records provided in **Appendix G**.

Prior to collection of samples, monitoring wells were purged using low-flow techniques using either a peristaltic pump or micropurge pump and controller. Dependent on site-specific hydrogeology monitoring wells were purged at a flow rate of the order of 0.1 - 0.5 L/min to minimise the suspended solids within the purge water. Purging continued until the respective groundwater parameters had stabilised to the levels provided in Table 8.1.

Table 8.1: TDS Sampling Programme

Groundwater Parameter	Adopted Purging Stabilisation Levels

Groundwater Parameter	Adopted Purging Stabilisation Levels
Dissolved oxygen	+/-10%
pH	+/-0.1
Temperature	+/-10%
Electrical conductivity	+/-3%
Redox	+/-10%

Physical indicators such as the presence (and percentage) of suspended solids, colour, the presence/absence and nature of odours and the presence/absence of slicks or sheens on purge water were recorded on the field records, and are provided in **Appendix G**.

Dedicated Teflon® lined LDPE tubing was used at each monitoring well. The interface probe was thoroughly decontaminated between gauging events with a phosphate free detergent (Decon 90®) and rinsed with potable water.

Following purging the low-flow sampling equipment was used to directly fill the appropriately preserved laboratory prepared sample containers with groundwater extracted from each well. Care was taken to minimise agitation of water samples and to completely fill sample containers.

For additional sample integrity, single-use, disposable nitrile gloves were used during purging and sampling and were replaced between each sampling location.

The samples for metals submitted for analysis as both filtered (through a 0.45 µm cellulose filter) and non-filtered (total).

Unless stated within this section, the identification, preservation, handling and transportation of groundwater samples collected during the TDS APECS was in general accordance with the requirements of the ES SAQP (**Ref.5**), in **Appendix L** and **Section 8.8** of this document.

8.7.4 Sediment Sampling

Sediment samples were collected from the periphery of the various water bodies using sludge sampling equipment that is designed to capture an undisturbed sample from non-cohesive materials. The sampler can be used to take undisturbed samples up to 0.3 m thick in single use sealable plastic liners, suitable for geotechnical and/or chemical analysis.

Where the conditions did not allow the sludge sampling equipment to be used, such as where sediments were dry or consolidated, samples were collected using hand tools.

The sediment sampler and/or hand tools were thoroughly decontaminated between sampling events with a phosphate free detergent (Decon 90®) and rinsed with potable water.

Single-use, disposable nitrile gloves were used during, and were replaced between, each sampling location.

Unless stated within this section, the identification, preservation, handling and transportation of sediment samples collected during the TDS APECS was in general accordance with the requirements of the ES SAQP (**Ref.5**), in **Appendix L**and **Section 8.8** of this document.

8.7.5 Surface Water Sampling

Surface water samples were collected from the periphery of the water body using an extension pole with a Teflon® cup (i.e. dip sampler). At each location where water was present in sufficient depth, the water was collected at a nominal depth of approximately 300mm below the water surface. The surface water collected via the dip sampler was transferred to appropriately preserved laboratory prepared sample containers. Sample containers were filled to eliminate headspace and minimise the loss of volatile compounds. The samples for metals submitted for analysis as both filtered (through a 45 µm cellulose filter) and non-filtered (total).

The surface water parameters (dissolved oxygen, pH, temperature, electrical conductivity, redox and turbidity) were recorded during sample collection.

The dip sampler cup was thoroughly decontaminated between sampling location with a phosphate-free detergent (Decon 90®) and rinsed with potable water.

For additional sample integrity, single-use, disposable nitrile gloves were used during, and were replaced between, each sampling location.

Unless stated within this section, the identification, preservation, handling and transportation of surface water samples collected during the TDS APECS was in general accordance with the requirements of the ES SAQP (**Ref.5**), in **Appendix L** and **Section 8.8** of this document.

8.8 Preservation of Samples and Chain of Custody

Sample preservation was undertaken in general accordance with NEPM (2013), (Ref.6).

Appropriately preserved sample containers, prepared and provided by the respective laboratory/s, were used for all samples, according to the matrix and analysis required.

Sample containers were filled to eliminate headspace and minimise the loss of volatile compounds.

As soon as practicable after collection, samples were:

- Labelled in accordance with the requirements of the AGLM Specification for the APECS (**Ref.1**) as set out in the ES SAQP (**Ref.5**), in **Appendix L**;
- Placed on ice in an insulated container to keep them below 4°C;
- Stored in a secure location;
- Chain-of-custody documentation (CoC) completed; and
- Couriered to the laboratory with the completed COC signed by the appropriate ES team member.

Information on the CoC included the sampler, sample identifier, sample matrix, collection date, analyses to be performed, sample preservation method, sample release date and sample received date. CoCs are provided in **Appendix I** with the respective laboratory certificates.

9 Laboratory Analysis of Chemicals of Potential Concern (CoPC)

The following CoPC, shown in **Table 9.1,** were analysed as part of the TDS APECS:

Table 9.1: CoPC Analysed - Tomago Development Site

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
AEC 1	Soil	1	2	▪ TRH ▪ BTEX ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ VOCs – selected analysis ▪ Asbestos – surface / fill samples only
	Groundwater	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
AEC 2	Soil	8	11	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis ▪ OCP – surface / fill samples only ▪ OP – surface / fill samples only ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only ▪ F&TC
	Surface Soils	5	5	▪ Lead ▪ Asbestos ▪ Fluoride
AEC 3	Soil	1	2	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis ▪ PCBs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
AEC 4	Soil (stockpile / mound samples)	2	2	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
AEC 5	Soil	6	12	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only ▪ Fluoride

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
	Groundwater	3	3	▪ TRH ▪ BTEX ▪ VOCs – selected analysis ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
AEC 6	Soil (stockpile / mound samples)	2	2	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Surface Water	1	1	▪ TRH ▪ BTEX ▪ VOCs – selected analysis ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Sediment	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
AEC 7	Soil (stockpile / mound samples)	3	3	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
Background Locations	Soil	10	20	▪ TRH ▪ BTEX ▪ PAHs ▪ OCP ▪ OPP ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only ▪ F&TC
	Groundwater	4	4	▪ TRH ▪ BTEX ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Surface Water	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Surface Soils	10	10	▪ Lead ▪ Asbestos ▪ Fluoride

10 Data Quality Objectives

10.1 Quality control/Quality Assurance Assessment

DQI outcomes expressed in terms of the data quality indicators (precision, accuracy, representativeness, comparability, completeness and sensitivity - PARCCS) for the TDS APECS have been reviewed in detail taking into account application, frequency, acceptance criteria, and assessment. The full review of the PARCCS outcomes achieved for the TDS APECS in terms of these review parameters are provided in **Appendix J**, as Tables 4 and 5 of the overall APECS PARCCS review for all of the sites.

Samples which for reasons discussed may have been considered to be estimates and so have not been relied on by ES when making conclusions as part of the TDS APECS, are detailed in **Appendix J**.

For the purposes of clarity, the statements of PARCCS outcomes within the limitations discussed in **Appendix J**, have also been provided in the following **Sections 11 and 12**.

11 Summary of Field PARCCS Outcomes

The following section summaries the assessment of the field QA/QC for the TDS APECS.

Records of QA/QC samples collected are provided in **Appendix D, G and H**.

Refer to Appendix J for further details on the following items:

- Relative Percent Difference (RPD) Calculations;
- Field Blanks results;
- Trip Blank results; and
- Trip Spike results.

11.1 Statement of Field Data Precision

ES have reviewed the precision of the field investigation to determine its reliability for the purposes of the investigation in terms of:

- Appropriate SOPs being used and complied with;
- Experienced samplers being used;
- All critical samples being collected;
- Field documentation was used and was reviewed as being reliable;
- Climatic conditions were suitable for collection of reliable samples;
- Appropriate environmental media were sampled;
- Field instrumentation, PID, interface probe, and water quality meter, were calibrated and were in good operating condition.

Full details of the assessment of precision of the field operations is presented in **Appendix J**.

ES have relied on the precision of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.2 Statement of Field Data Accuracy

ES have reviewed the accuracy of the field investigation to determine its reliability for the purposes of the investigation in terms of:

- Standard Operating Procedures (SOPs) being appropriate and complied with.

Full details of the assessment of accuracy of the field operations is presented in **Appendix J**.

ES have relied on the accuracy of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.3 Statement of Field Data Representativeness

ES have reviewed the representativeness of the field investigation to determine its reliability for the purposes of the investigation in terms of:

- Appropriate media sampled according to SAQP; and
- All media identified in SAQP sampled.

Full details of the assessment of representativeness of the field operations is presented in **Appendix J**.

ES have relied on the representativeness of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.4 Statement of Field Data Comparability

ES have reviewed the comparability of the field investigation to determine its reliability for the purposes of the investigation in terms of:

- Same SOPs used on each occasion;
- Experienced samplers used;
- Climatic conditions were suitable for collection of reliable samples; and
- Appropriate environmental media were sampled.

Full details of the assessment of comparability of the field operations is presented in **Appendix J**.

ES have relied on the comparability of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.5 Statement of Field Data Completeness

ES have reviewed the completeness of the field investigation to determine its reliability for the purposes of the investigation in terms of:

- All critical locations sampled;
- All samples collected;
- SOPs were appropriate and complied with;
- Experienced samplers used; and
- Correct documentation

Full details of the assessment of completeness of the field operations is presented in **Appendix J**.

ES have relied on the completeness of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.6 Statement of Field Data Sensitivity

ES considers the sensitivity of the field investigation to be reliable for the purposes of the investigation, and have generally relied on the precision of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

11.7 Field PARCCS Compliance

Based on the discussion provided above ES considers the QA/QC of the field investigation as assessed against the PARCCS parameters, to be reliable and without bias, and have relied on the QA/QC of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

12 Laboratory Quality Assurance and Quality Control

The following section provides an overall comment of each item of the PARCCS review. Refer to **Appendix J** for tabulated PARCCS review and discussion of the implications of non-compliances with the DQI.

12.1 Statement of Laboratory Precision

ES have reviewed the precision of the laboratory investigation to determine its reliability for the purposes of the investigation in terms of analysis of:

- Intra laboratory duplicates;
- Inter-laboratory duplicates; and
- Laboratory prepared volatile trip spikes.

Full details of the assessment of precision of the laboratory investigation is presented in **Appendix J**.

ES considers the precision of the laboratory analyses to be reliable and without bias. Based on the discussion provided in **Appendix J**, exceptions reported to the laboratory precision DQIs are not considered likely to have had a systemic impact on the overall precision of laboratory results.
As a result, ES have relied on the precision of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.2 Statement of Laboratory Accuracy

ES have reviewed the accuracy of the laboratory investigation to determine its reliability for the purposes of the investigation in terms of analysis of:

- Field blanks;
- Rinsate blanks;
- Reagent blanks;
- Method blanks;
- Matrix spikes;
- Matrix spikes;
- Surrogate spikes;
- Reference materials;
- Laboratory control samples; and
- Laboratory-prepared spikes.

Full details of the assessment of accuracy of the laboratory investigation is presented in **Appendix J**.

ES considers the accuracy of the laboratory analyses to be reliable and without bias. Based on the discussion provided in **Appendix J**, exceptions reported to the laboratory accuracy DQIs are not considered likely to have had a systemic impact on the overall accuracy of laboratory results.

As a result, ES have relied on the accuracy of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.3 Statement of Laboratory Representativeness

ES have reviewed the representativeness of the laboratory investigation to determine its reliability for the purposes of the investigation in terms of:

- All samples analysed in accordance with the SAQP (**Volume 7** of **7**).

Full details of the assessment of representativeness of the laboratory investigation is presented in **Appendix J**.

ES considers the representativeness of the laboratory analyses to be reliable and without bias. Based on the discussion provided in **Appendix J**, exceptions reported to the laboratory representativeness DQIs are not considered likely to have had a systemic impact on the overall representativeness of laboratory results.
As a result, ES have relied on the representativeness of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.4 Statement of Laboratory Comparability

ES have reviewed the comparability of the laboratory investigation to determine its reliability for the purposes of the investigation in terms of:

- Sample analytical methods used;
- Sample Limit of reporting (LOR);
- Consistent laboratories; and
- Consistent units.

Full details of the assessment of comparability of the laboratory investigation is presented in **Appendix J**.

ES considers the comparability of the laboratory analyses to be reliable and without bias. Based on the discussion provided in **Appendix J**, exceptions reported to the laboratory comparability DQIs are not considered likely to have had a systemic impact on the overall comparability of laboratory results.

As a result, ES have relied on the comparability of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.5 Statement of Laboratory Completeness

ES have reviewed the completeness of the laboratory investigation to determine its reliability for the purposes of the investigation in terms of analysis of:

- All critical samples analysed according to SAQP;
- All analytes analysed according to SAQP;
- Appropriate methods and LORs;
- Sample documentation complete; and
- Compliant sampling holding times.

Full details of the assessment of completeness of the laboratory investigation is presented in **Appendix J**.

ES considers the completeness of the laboratory analyses to be reliable and without bias. Based on the discussion provided in **Appendix J**, exceptions reported to the laboratory completeness DQIs are not considered likely to have had a systemic impact on the overall completeness of laboratory results.

As a result, ES have relied on the completeness of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.6 Statement of Laboratory Sensitivity

ES considers the precision of the laboratory analyses to be reliable and without bias and have relied on the sensitivity of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

12.7 Laboratory PARCCS Compliance

Based on the discussion provided above ES considers the QA/QC of the laboratory investigation as assessed against the PARCCS parameters, to be reliable and without bias, and have relied on the QA/QC of the laboratory investigation when making conclusions pertaining to the objectives of the TDS APECS.

13 Field Observations

The following section provides reference to the field observations for materials encountered during the fieldwork portion of the TDS APECS.

Observations pertinent to Pre-Existing Contamination are included in **Section 16** of this report.

13.1 Field Observations - Soil

Soil field observations are included in **Appendices E-G.**

13.2 Field Observations - Groundwater

Groundwater field observations are included in **Appendices E-G.**

13.3 Field Observations - Sediment

Sediment field observations are included in **Appendices E-G.**

13.4 Field Observations – Surface Water

Manually recorded field records of surface water sampling are included in **Appendices E-G.**

14 Results Exceeding the Adopted Assessment Criteria

14.1 Results Exceeding Criteria

The following section summarised the results returned for each AEC which were found to exceed the adopted assessment criteria for the relevant matrix. The summarised results are provided in Table 14.1.

Table 14.1: Results Exceeding Criteria

AEC	Matrix	Adopted Assessment Criteria	CoPC (and Assessment Criteria Concentration)	Sample Result Exceeding Criteria
AEC 1: Septic Tanks	Groundwater	NEPM 2013 B1 Table 1C GILs Marine Waters(A)	Chromium (III+VI)	T_1_ESMW01 (non-filtered 2µg/L)
			Zinc (15µg/L)	T_1_ESMW01 (filtered (28µg/L) and non-filtered (30µg/L))
AEC 2: Residential Compound	Soil	NEPM 2013 B1 Table 1A (1) HIL Rec C	Carcinogenic PAHs (as B(a)P TPE) (3mg/kg)	T_2_ESSB02_0.1 (15mg/kg)
		NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil; 0-2 m	TRH C16-C34 (300 mg/kg)	T_2_ESSB02_0.1 (370 mg/kg)
			Benzo(α)pyrene (0.7 mg/kg)	T_2_ESSB02_0.1 (9.8 mg/kg)
AEC 5: Dumped Waste (including potential ACM)	Soil	NEPM 2013 B1 Table 1A (1) HIL Rec C	Carcinogenic PAHs (as B(a)P TPE) (3 mg/kg)	T_5_ESMW05_0.1 (45mg/kg)*. T_5_ESSB03_0.1 (30mg/kg). T_5_ESSB04_0.1 (330mg/kg).
			PAHs (Sum of total) (300 mg/kg)	T_5_ESMW05_0.1 (480mg/kg)*. T_5_ESSB04_0.1 (3200mg/kg).
		NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil; 0-2 m	TRH C16-C34 (300 mg/kg)	T_5_ESSB03_0.1 (720 mg/kg) T_5_ESMW05_0.1 (940 mg/kg)
			Benzo(α)pyrene (0.7 mg/kg)	T_5_ESSB03_0.1 (21 mg/kg) T_5_ESMW05_0.1 (34 mg/kg) T_5_ESSB04_0.1 (250 mg/kg) T_5_ESSB04_1.0 (0.7 mg/kg)
		NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse	TRH C16-C34 (2500 mg/kg)	T_5_ESSB04_0.1 (7400 mg/kg)
		NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour	Naphthalene (3 mg/kg)	T_5_ESSB04_0.1 (0.9-6.4 mg/kg) T_5_ESMW05_0.1 (8.4-15 mg/kg)

AEC	Matrix	Adopted Assessment Criteria	CoPC (and Assessment Criteria Concentration)	Sample Result Exceeding Criteria
		Intrusion, Sand 0-1 m		
	Groundwater	NEPM 2013 B1 Table 1C GILs Fresh Waters(A) Guideline	Arsenic (13µg/L)	T_5_ESMW06 (13µg/L, non-filtered)
			Cadmium (0.2µg/L)	T_5_ESMW04 (0.2µg/L, non-filtered)
			Copper (1.4µg/L)	T_5_ESMW04 (17µg/L, non-filtered). T_5_ESMW05 (50µg/L, non-filtered) (42µg/L, filtered). T_5_ESMW06 (27µg/L, non-filtered) (17µg/L, filtered).
			Chromium (III+VI)	T_5_ESMW04 (8µg/L, non-filtered). T_5_ESMW05 (8µg/L, non-filtered) (1µg/L, filtered). T_5_ESMW06 (9µg/L, non-filtered).
			Mercury (0.06µg/L)	T_5_ESMW06 (0.09µg/L, non-filtered)
		NEPM 2013 B1 Table 1C GILs Marine Waters(A) Guideline	Cadmium(0.7µg/L)	T_5_ESMW05 (1.0µg/L, non-filtered) (0.8µg/L, filtered) T_5_ESMW06 (2.2µg/L, non-filtered) (2.1µg/L, filtered)
			Lead (4.4µg/L)	T_5_ESMW04 (18µg/L, non-filtered) T_5_ESMW05 (31µg/L, non-filtered) (19µg/L, filtered) T_5_ESMW06 (45µg/L, non-filtered) (33µg/L, filtered)
			Zinc (15µg/L)	T_5_ESMW04 (130µg/L, non-filtered) (130µg/L, filtered) T_5_ESMW05 (650µg/L, non-filtered) (500µg/L, filtered) T_5_ESMW06 (870µg/L, non-filtered) (780µg/L, filtered)
		NEPM 2013 B1 Table 1C GILs Drinking Water(B)	Arsenic (10µg/L)	T_5_ESMW04 (12µg/L, non-filtered) T_5_ESMW06 (13µg/L, non-filtered)

AEC	Matrix	Adopted Assessment Criteria	CoPC (and Assessment Criteria Concentration)	Sample Result Exceeding Criteria
			Cadmium (2µg/L)	T_5_ESMW06 (2.2µg/L, non-filtered) (2.1µg/L, filtered)
			Lead (10µg/L)	T_5_ESMW04 (18µg/L, non-filtered) T_5_ESMW05 (31µg/L, non-filtered) (19µg/L, filtered) T_5_ESMW06 (45µg/L, non-filtered) (33µg/L, filtered)
			Nickel (20µg/L)	T_5_ESMW04 (33µg/L, non-filtered) (31µg/L, filtered) T_5_ESMW05 (88µg/L, non-filtered) (81µg/L, filtered) T_5_ESMW06 (150µg/L, non-filtered) (140µg/L, filtered)
			Benzo(a)pyrene (0.01µg/L)	T_5_ESMW05 (0.14µg/L, non-filtered)
AEC 6: Dam and Stockpiled Material	Surface Water	ANZECC 2000 FW 95%	Copper (1.4µg/L)	T_6_SW01 (4µg/L, non-filtered) (5µg/L, filtered)
			Chromium (III + VI)	T_6_SW01 (2µg/L, non-filtered)
			Lead(3.4µg/L)	T_6_SW01 (5µg/L, non-filtered)
			Zinc(8µg/L)	T_6_SW01 (54µg/L, non-filtered) (43µg/L, filtered)
AEC 7: Stockpiled Material Encroaching TDS-2 (Eastern Boundary from Adjacent Property)	Soil	NEPM 2013 B1 Table 1A (1) HIL Rec C	Chromium (as Total Chromium) (300 mg/kg)	T_7_SP03C (610 mg/kg)
Background Areas	Soil	NEPM 2013 B1 Table 1A (3) Res Soil 0-1m HSL for Vapour Intrusion	F2 – TRH (110 mg/kg)	T_SB07 (290 mg/kg)
Background Areas	Groundwater	NEPM 2013 B1 Table 1C GILs Fresh Waters(A)	Cadmium (0.2µg/L)	T_ESMW10 (0.4µg/L, non-filtered) (0.4µg/L, filtered)
			Chromium (III + VI)	T_ESMW07 (2µg/L, non-filtered)

AEC	Matrix	Adopted Assessment Criteria	CoPC (and Assessment Criteria Concentration)	Sample Result Exceeding Criteria
				T_ESMW08 (3µg/L, non-filtered) T_ESMW09 (1µg/L, non-filtered) T_ESMW10 (11µg/L, non-filtered and 6µg/L filtered)
			Copper (0.2µg/L)	T_ESMW07 (2µg/L, non-filtered) (3µg/L, filtered) T_ESMW09 (5µg/L, non-filtered) (5µg/L, filtered) T_ESMW10 (33µg/L, non-filtered) (27µg/L, filtered)
			Nickel (11µg/L)	T_ESMW07 (43µg/L, non-filtered) (42µg/L, filtered) T_ESMW09 (45µg/L, non-filtered) (41µg/L, filtered) T_ESMW10 (96µg/L, non-filtered) (110µg/L, filtered)
			Zinc (8µg/L)	T_ESMW08 (11µg/L, filtered)
		NEPM 2013 B1 Table 1C GILs Drinking Water(B)	Lead (10µg/L)	T_ESMW07 (13µg/L, non-filtered) (11µg/L, filtered) T_ESMW10 (32µg/L, non-filtered) (22µg/L, filtered)
			Nickel (20µg/L)	T_ESMW07 (43µg/L, non-filtered) (42µg/L, filtered) T_ESMW09 (45µg/L, non-filtered) (41µg/L, filtered) T_ESMW10 (96µg/L, non-filtered) (110µg/L, filtered)
	Surface Water	ANZECC 2000 FW 95%	Copper (1.4µg/L)	T_SW02 (11µg/L, non-filtered) (2µg/L, filtered)
			Chromium (III + VI)	T_SW02 (4µg/L, non-filtered)
			Lead(4.4µg/L)	T_SW02 (9µg/L non-filtered)
			Zinc (15µg/L)	T_SW02 (99µg/L, non-filtered) (170µg/L, filtered)

*estimates only. Refer to Section 16.5.1 for further details.

14.2 Results Exceeding Guidelines for Microbial Indicators - E.Coli and Coliforms

Microbial indicators in the forms of E.coli and Coliforms (Total and Faecal) were collected to screen for the potential for impacts of contamination to be impacting groundwater on the TDS. The samples were collected from:

- AEC 1 – T_1_ESMW01;
- AEC 5 - T_5_ESMW05;
- Background:
    - T_ESMW08;
    - T_ESMW09; and
    - T_ESMW10.

The results all exceeded the adopted screening criteria ADWG2011 (**Ref.19**). The exceedances were mainly due to the LOR being greater than the screening criteria. The exception to this is results returned for total coliforms from two samples T_ESMW09 and T_ESMW10. These samples were background locations and accordingly weren't specifically targeted as potential AEC for microbial impacts.

15 Method for Determining Pre-Existing Contamination

The overall objective of the TDS APECS is to define, to the extent practicable, the nature and extent of contamination on TDS and to make determination whether the contamination was Pre-Existing Contamination on the Sites as at Completion. Given this, the specific objectives were to:

- identify any contamination which may be present at TDS; and
- provide an opinion as to whether contamination identified at TDS is 'Pre-Existing Contamination' as per the definition provided in **Section 1** of this report.

15.1 Pre-Existing Contamination Decision Process

In order to make a determination of whether contamination is Pre-Existing Contamination, ES have adopted a lines of evidence decision process. This is a process which examines the information available at each step to allow a determination to be made as to whether contamination is actually, or is likely to be, Pre-Existing Contamination.

The decision process is as follows:

1. A determination was made as to whether the levels detected were above naturally occurring background levels. If not, then Pollution or Contamination was considered to not exist. If so, then the steps below were completed in order to determine whether the Pollution or Contamination identified was Pre-Existing Contamination.
2. An assessment was made as to the most likely source/s of the identified Pollution or Contamination. Once this was done, an assessment was undertaken to confirm whether the most likely source/s of the Pollution or Contamination were present at Completion. This involved a review of the reports prepared by ERM and obtaining information from AGLM regarding any incidents or changes to activities or structures which occurred post-Completion.
3. If based on this information the most likely source of the Pollution or Contamination identified:
    a. arose post-Completion then it was considered to be unlikely to be Pre-Existing Contamination; or
    b. was present as at Completion, then it was considered likely that the Pollution or Contamination was wholly or partially Pre-Existing Contamination.
4. Where it was considered likely that the Pollution or Contamination was wholly or partially Pre-Existing Contamination, the proportion which was Pre-Existing Contamination was estimated based on the best information available (including ERM's reports, the length of time which the most likely source/s of the Pollution or Contamination were present at the sites both before and after Completion and information from AGLM regarding any incidents or changes to activities or structures which occurred post-Completion).

The decision process is provided in full as a flow chart in **Appendix B**.

15.2 Post-Completion Contamination

Where contamination is thought to be a combination of 'Pre-Existing Contamination' and contamination arising post-Completion, that is 'Post-Completion Contamination', then the respective AEC Summary/s states this and provides commentary as to the extent to which the contamination is thought to be 'Pre-Existing Contamination', based on the decision process outlined above. Where the precise allocation as to 'Pre-Existing Contamination' and otherwise is not known, an estimate has been made based on the best information available, including records and information provided by AGLM regarding activities (including

remediation or spills) which have occurred post Completion. For contamination which is considered to be the result of sources which existed prior to Completion and remained in place after Completion an estimate has been made as to the extent to which the contamination is Pre-Existing Contamination based on:

- the period of time the source of the contamination has been operating or has been in place on TDS; and
- the period of time which has elapsed from Completion, until the date on which the relevant samples were taken.

The only exceptions to this process are if:

- AGLM is known to have remediated a source of contamination since Completion; or
- the contamination is known to have been caused by an incident or circumstances which occurred after Completion.

15.3 Post Completion Incidents

On the 6th November 2017, AGLM provided ES with information related to four incidents that had occurred at either the BPS or LPS Post Completion and had the potential to impacts the sampling results collected during the APECS. These incidents were:

- An elevated pH recording of 9.32 within BPS EPL 779 Discharge Point 7 (Tinkers Creek) on the 9th of April 2017;
- A Ferric Chloride leak resulting in a pH reading of 5.7 on the 11th March 2015;
- An elevated pH reading at the Bayswater Demin Plant on the 14th May 2015; and
- A Spill of 20L of fuel on the 8th January 2016.

None of these above incidents have impacted the TDS APECS.

16 Discussion of Results

16.1 AEC 1: Septic Tanks

AEC 1 was identified as an AEC due to the presence of two septic tanks servicing the residence on the site.

Zinc was detected in groundwater in an elevated concentration in one groundwater sample (T_1_ESMW01), that exceeds the adopted GAC (**Ref.6**) for the TDS APECS. The exceedance (30 µg/L not filtered and 28 µg/L filtered) was 3.5 times the most sensitive of the adopted GAC, that being NEPM 2013 B1 Table 1C GILs, Fresh Waters(A). Although this exceeds the criteria, zinc concentrations detected in groundwater collected from the Background wells installed on the TDS ranged from 0.9 to 34 times the GAC. This puts the concentration detected in groundwater at AEC 1 toward the lower end of the range of zinc concentrations detected in the Background wells.

Discussion of the hydrogeological conditions encountered on the TDS are provided in **Section 2.6**.

Given the site use and history, although the elevated concentration of zinc in groundwater is likely to have been present at the time of Completion, it is thought likely to be indicative of the local catchment since even the background wells contained zinc. Zinc is common in groundwater where there has been local buildings and stormwater systems where galvanised roofs and downpipes exist and the exceedance of less than one order of magnitude is consistent with such use.

Chromium (III + VI) was detected within one groundwater monitoring well (T_1_ESMW01) at a concentration of 2 µg/L, which is above the adopted GAC of 1 µg/L. The filtered chromium groundwater sample from the sample location reported a concentration below the LOR. The Chromium (III+VI) exceedance was at the low end range of detections above the GAC, with the highest concentrations reported in AEC 5. Therefore, it is unlikely that the reported Chromium (III+VI) exceedances within AEC 1 are related to the immediate use of the area, and they are considered more likely representative of background water quality.

16.2 AEC 2: Residential Compound

AEC 2 was identified predominantly due to the presence of the garage/shed adjoining the residence and because of the observations that a number of CoPC including fuels, oils and other chemicals were observed to be stored unbunded within the garage/shed and that it was likely that such CoPC may be used within or around the AEC.

A number of CoPC were detected in one soil sample in elevated concentrations. The following concentrations were detected above the relevant SAC:

- NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil; 0-2 m;
    - Benzo(α)pyrene: 14 times;
    - TRH C6-C34: 1;
- NEPM 2013 B1 Table 1A (1) HIL Rec C Guideline
    - PAH as B(a)P TPE: 5 times.

Based on the above, the CoPC detected in AEC 2 are considered to be contamination and pollution under the definitions provided in Section 1 of this report.

The above COPC were detected in near-surface soils so the following exposure pathways are considered likely to exist for residents and visitors to the TDS:

- Inhalation;
- Ingestion; and
- Absorption (dermal contact).

Given that exposure pathways have been identified the risk to residents and visitors to the TDS as a result of the impacts detected are increased.

Evidence also shows that the residence and garage/shed are considered to be the likely sources of the identified contamination and pollution have been present on the site for some decades and so it is possible that over that time the CoPC detected may have been used in and around AEC 2 on more than one occasion. The extent of the CoPC also appear vertically limited to near surface soils and were only detected in one sample, indicating that the impacts are not likely to be extensive across AEC 2.

Further investigation would be required to identify the specific source and extent of detected CoPC.

Where data from previous site assessments are not available the determination of the pre-existence or otherwise of contamination is based on a lines of evidence approach. In the instance of the limited, surface soil impacts identified on AEC-2 this determination is based on the site history, including the length of time which the residence and garage/shed have been present on the site and the limited time which had passed since Completion at the time of the ES assessment of the TDS. From this evidence, ES considers that is likely the contamination identified at AEC 2 is predominantly Pre-Existing Contamination.

16.3 AEC 3: Abandoned Motor Vehicles

AEC 3 was identified as an AEC predominantly due to the presence of AEC 2 was identified as an AEC predominantly due to the presence of abandoned, dismantled and burnt out motor vehicles. A review of recent online aerial photographs shows that vehicles were on the TDS in the general position of the abandoned vehicles, observed in AEC 3 during the walkover inspection, on 19 June, 2015, or before Completion. Evidence also shows that the residence and garage/shed have been present on the site for some decades and so it is possible that over that time vehicles may have resided within AEC 3 on more than one occasion.

However, no CoPC were detected in AEC 3 exceeding the adopted SAC.

16.4 AEC 4: Mounds / Potentially Stockpiled Material

AEC 4 was identified as an AEC predominantly due to the presence of mounds which have been overgrown with vegetation. The vegetation was too thick for a good visual assessment of the composition of the mounds to be completed. As a result, the mounds may comprise stockpiled materials which could be proven to be contamination and/or pollution under the definitions provided in Section 1 of this report. As evidence shows that the residence and garage/shed have been present on the site for some decades and the mounds are heavily overgrown it is considered that the mounds would have been within AEC 3 prior to Completion.

However, no CoPC were detected in AEC 4 exceeding the adopted SAC.

16.5 AEC 5: Dumped Waste

AEC 5 was identified as an AEC predominantly due to the presence of extensive fly dumping. As described in the PESA (**Ref.4**):

> "*Extensive fly dumping of waste material was noted along the majority of the former alignment of Old Punt Road, for a distance of approximately 500-600 m. Wastes such as drums, vehicle bodies, timber, vegetation clippings and a number of other general wastes were observed along this section of the TDS.*"

AEC 5 may be accessible to pedestrians but it is not accessible to vehicles. The former southern entry to Old Punt Rd is blocked by commercial development and the northern end is fitted with a locked gate. The volume and types of materials observed suggest that vehicular access would have been required to effect the tipping observed. ES considers that as the fly tipping is likely to have required vehicular access to the site it would have needed to have occurred before the barriers restricting vehicular access were in place - which would have been pre-Completion.

Further, the highly-weathered condition of the fly tipped material indicates that it had been in the location for some time (likely to be predominantly Pre-Completion).

16.5.1 AEC 5: Soil

A number of CoPC were detected in soil samples in elevated concentrations.

The exceedances are significant, with the following concentrations detected above the relevant SAC as summarised below:

- NEPM 2013 B1 Table 1A (1) HIL Rec C Guideline

    - PAH (as BaP TPE): 10 – 110 times;
    - Total PAH: 1.6 – 10.7 times;
- NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand 0-1m
    - Naphthalene: 1-5 times the SAC
- NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil; 0-2 m
    - TRH C16-C34: 2.4 – 3.1 times the SAC
    - Benzo(α)pyrene: 1 – 357 times the SAC
- NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse
    - TPH C16-C34: 3 times the SAC.

AEC 5 encompasses the former alignment of Old Punt Road. This access way is not open to general traffic but can be accessed from either end. It appears that the former roadway has provided a convenient location for unlicensed dumping of various waste materials. AEC 5 was closed as a public thoroughfare prior to Completion. It is considered, based on observations made of the volume and weathering of the waste piles, that dumping has occurred for some time, and all of these waste materials were dumped prior to Completion.

A review of the borelogs, provided in Appendix E, from AEC 5 shows that an asphalt was noted at sampling locations:

- T_5_ESMW04 ("Asphalt" noted between 0.0 -0.05 mbgl); and
- T_5_ESMW05 ("Asphalt" noted between 0.0 -0.05 mbgl).

The soil sample collected from T_5_ESMW05 at a depth of 0.1 mbgl reported concentrations of carcinogenic PAHs (45 mg/kg) and sum of total PAHs (480 mg/kg) above the SAC of 3 mg/kg and 300 mg/kg respectively. The sample is reported to be collected from beneath the observed asphalt within Fill (noted to be gravelly SAND). It is ES' opinion that given the proximity to the asphalt to the collected sample, there was the potential for components of the Asphalt to enter the sample during collection, thereby potentially increasing the carcinogenic PAH and sum of total PAH concentrations reported. ES therefore consider the T_5_ESMW05 0.1 mbgl results to be an indicator of actual concentrations from that location.

ES notes that two other soil bore locations (T_5_ESSB03 and T_5_ESSB04) from AEC 5 reported concentrations of either carcinogenic PAHs and/or sum of total PAHs above the SAC. These soil bores did not report asphalt within the bore logs. ES therefore consider these concentrations to be representative of the fill material within these locations.

The source of the PAHs above the SAC are likely to be the result of dumping activities within AEC 5.

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A total of 10 soil samples were collected from AEC 5. Based on the results two shallow samples exceeded the SAC. Based on the distribution of the samples collected and on the limitations of the sampling density it is estimated that a possible area of 350 m x 20 m x 0.3 m deep (i.e. 2 100 m^3) in AEC 5 could be impacted to an extent similar to the samples collected. Further investigation would be required to confirm this estimate of impact.

As the waste dumped across AEC 5 is uncontrolled and the site is not secured, there remains potential for dumping to continue and for the waste to be disturbed and/or spread unless adequate controls are implemented.

As the impacts are considered to have occurred prior to Completion, ES considers that all of the contamination present at AEC 5 is predominantly Pre-Existing Contamination.

16.5.2 AEC 5: Groundwater

A number of CoPC were detected in groundwater samples in elevated concentrations. The following concentrations were detected above the relevant GAC as summarised below:

- NEPM 2013 B1 Table 1C GILs Fresh Waters (A) Guideline
    - Arsenic: 1 times;
    - Cadmium: 1 times;
    - Chromium: 8-9 times;
    - Copper: 12 – 36 times;
    - Mercury: 1.5 times;
    - Nickel: 3 – 13.6 times;
- NEPM 2013 B1 Table 1C GILs Marine Waters(A) Guideline
    - Cadmium: 1.4-3.1 times;
    - Chromium:1.8-2.0 times;
    - Lead: 4.1-10.2 times;
    - Zinc: 8.7-58 times;
- NEPM 2013 B1 Table 1C GILs Drinking Water (B) Guideline
    - Arsenic: 1.2-1.3 times;
    - Cadmium: 1.1 times;
    - Lead: 1.8-4.5 times;
    - Nickel: 1.7-7.5 times; and
    - Benzo(α)pyrene: 14 times.

The above concentrations would constitute contamination and/or pollution under the definitions provided in Section 1 of this report.

Given the site use, history and field observations, ES considers that all of the elevated groundwater concentrations detected are predominantly Pre-Existing Contamination.

16.6 AEC 6: Dam and Stockpiled Material

AEC 6 was identified as an AEC predominantly due to the presence of a dam and material stockpiles. Given the position of the stockpiles which are placed immediately on the down-gradient side of the dam, it is likely that they are comprised of material excavated to create the dam. Evidence shows that the dam was present prior to Completion and, accordingly, it is considered that the mounds would have present prior to Completion. Results of sampling on AEC 6 are discussed in the following section.

16.6.1 AEC 6: Soil

Soil samples collected from the stockpiled material did not exceed the adopted SAC for any analyte.

16.6.2 AEC 6: Sediment

Sediment samples collected from the dam did not exceed the SDAC for any analyte.

16.6.3 AEC 6: Surface Water

A number of CoPC were detected in elevated concentrations in surface water sampled from the dam. The exceedances could be considered to be minor to moderate with the following concentrations detected above the relevant SWAC as summarised below:

- ANZECC 2000 FW 95% (Ref.11)
    - Copper: 2.8 times;
    - Chromium: 2 times;
    - Lead: 1.7 times;
    - Zinc: 6.8 times.

The CoPC detected in elevated concentrations in surface water collected from the dam were metals which had been also been detected in elevated concentrations in surface water in the Background areas and so are considered by ES to likely to be naturally occurring background levels rather than contamination and/or pollution.

16.7 AEC 7: Stockpiled Material Encroaching TDS-2 (Eastern Boundary from Adjacent Property)

AEC 7 was identified as an AEC predominantly due to the presence of material stockpiles on the property adjacent the eastern boundary of TDS-2. A recent survey undertaken of the position of the boundary indicates that these material stockpiles have encroached onto TDS-2. A copy of the Site Survey Plan: 150469A_01 is provided in **Appendix M**. Historical aerial photographs indicate the stockpiles were deposited prior to Completion and so would constitute Pre-Existing Contamination.

A number of CoPC were detected in concentrations exceeding the adopted SAC in the stockpiled material located in AEC 7. The exceedances and waste classification screening results are provided below:

- NEPM 2013 B1 Table 1A (1) HIL Rec C Guideline
    - Chromium (as Total Chromium): 2 times;
- NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil; 0-2 m
    - TRH C16-C34: 1 times.

Evidence indicates that the material has been present for some time and is likely to have been present on the TDS prior to completion. The stockpiled materials which have encroached across the eastern boundary of TDS 2 could be determined to constitute contamination and/or pollution. Based on the above it is considered that all of the contamination and/or pollution from the encroaching stockpiles is Pre-Existing Contamination.

16.8 Background Areas

Background areas on the TDS for the purpose of the TDS APECS are those areas which were not identified as being AECs.

The following provides a summary of the results returned from samples collected across the Background areas compared to the adopted assessment criteria.

16.8.1 Background Areas – Soil

TRH (F2) was detected in one shallow soil sample, T_SB07_0.1 in the Background areas which exceeded the adopted SAC. The sample was collected from the north eastern corner or TDS - 2. This location is very close to a storm water culvert which diverts water predominantly from the Pacific Highway through TDS 2. The culvert has been in place for many years and a likely source. Based on the above the concentration of TRH detected in sample T_SB07_0.1 is considered to constitute contamination and/or pollution and is likely to have been Pre-Existing Contamination at or prior to Completion.

There is a residence directly adjacent to and down gradient of TDS-2. The residential property is not segregated from TDS-2 by any barrier and is prone to being impacted by any contamination migrating from TDS-2, therefore ES consider that residential screening criteria is also appropriate to apply to TDS-2, despite the zoning.

Regardless of the source, it is the understanding of ES that the scope of the TDS APECS is to determine whether any impacts on the site constitute pre-existing contamination. In this instance the Pacific Highway is a potential source of impact to TDS-2 which was present before Completion.

16.8.2 Background Areas – Groundwater

For the purpose of the TDS APECS all areas of the TDS which are outside of the AECs have been referred to as Background Areas. This term has been used as no specific source of potential contamination was identified as being within these areas. However, when considering whether the conditions encountered in these areas, particularly in groundwater are likely to represent background conditions for the site, further consideration of the site setting, topography and hydraulic gradient need to be considered before adopting results from any location as background.

The groundwater elevation data provided is based on a limited number of locations and indicates localised complexity at the TDS which precludes accurate inference of the flow direction without further investigation. ES considers that in lieu of more data points within the site, that the local topography provides a reliable guide to the likely generalised flow direction of the aquifer/s in the area of the TDS.

ES have reviewed this information and have concluded that the well which is most likely to represent local background conditions T_ESMWO9, is located centrally on the site and is the well with the highest groundwater elevation, indicating that it is unlikely to be impacted by development in and around the TDS. Apart from Nickel (Ni) all metals within T_ESMW09 were found to be below the GAC. As a result ES have adopted the result from T_ESMW09 as the low reliability background screening level (LRBSL) for Ni only.

A number of CoPC were detected in concentrations exceeding the adopted GAC and or LRBSL (Ni) in the Background areas of the TDS. The exceedances are provided below:

- NEPM 2013 B1 Table 1C GILs Fresh Waters (A) Guideline for groundwater
    - Cadmium: 2 times;
    - Copper: 10-165 times;
    - Chromium: 2-11 times;
    - Zinc: 1.4 times;

- NEPM 2013 B1 Table 1C GILs Marine Waters(A) Guideline
    - Lead: 1.6-7.3 times;
    - Chromium: 2.5 times;
    - Zinc: 1-18 times;
- NEPM 2013 B1 Table 1C GILs Drinking Water (B) Guideline
    - Lead: 1.1-2.2 times;
- TDS LRBSL (Ni)
- Nickel: 1 - 3.4 times.

The high concentrations of copper detected in groundwater are similar across the eastern half of TDS-1, both in Background and AEC wells. Based on the groundwater flow direction which can be interpolated from the groundwater elevation contours shown on **Figure 3** in **Appendix C**, it is unlikely that the concentrations of copper detected in the Background areas on the TDS are evidence of impact from the AECs. Rather it appears that concentrations in groundwater of copper are generally high in this section of the TDS. No potential source of copper was noted during the ES Phase 1 PSI (Ref.4) or during the fieldworks for the TDS APECS, either on or off site, nor was copper detected in elevated concentrations in soil at any location sampled across the site. Based on the limitations of the scope of the completed, the source of elevated copper in Background groundwater across the eastern half of TDS-1 remains undefined but may be indicative of local natural concentrations throughout the general area.

16.8.3 Background Areas – Surface Water

A number of CoPC were detected in concentrations exceeding the adopted SWAC in the Background areas of the TDS. The exceedances are provided below:

- ANZECC 2000 FW 95%
    - Copper: 7.9 times;
    - Chromium: 4 times;
    - Lead: 2.6 times;
    - Zinc: 21 times.

The metals detected in Background surface water on the TDS are consistent with those detected in both groundwater and surface water across AECS and Background areas and so are considered likely to be representative of the Background conditions in surface water on the TDS.

The low pH of the groundwater sampled on TDS is representative of the estuarine matrix. Low pH groundwater is consistent in the whole Hunter River Quaternary system and is likely to be natural on the TDS.

16.9 Asbestos

Asbestos was not detected in any of the soil or stockpile samples collected as part of the TDS APECS. This is despite targeted samples being collected from areas in which potential asbestos containing materials were observed. That asbestos was not detected in soil does not mean that asbestos is not present on the site, particularly in or around waste piles, or stockpiled materials. However, it does provide a strong indication that widespread asbestos impacts in soils across the TDS are unlikely. A formal hazardous material survey would be

required to confirm the presence and extent of asbestos containing materials across the site surface.

16.10 Microbial Indicators – E.Coli and Coliforms

Microbial indicators screened against the adopted screening criteria NHMRC ADWG 2011 (**Ref.19**) returned detections for total coliforms in two samples, T_ESMW08 and T_ESMW09. The criterion, which is zero for all indicators screened, are considered to be extremely conservative when applied to groundwater which is not being used as an untreated potable water source. The criteria adopted are also a screening level criteria and not an acceptance criteria. The samples which returned detections were both collected from monitoring wells located within the Background areas of the TDS, and not the AECs. No impacts or infrastructure were noted in the vicinity of the wells which could be considered to be likely sources of anthropogenic microbial impact.

Total coliforms alone do not necessarily indicate faecal contamination, and can result from a number of sources including agricultural runoff. Given that faecal coliforms and E.coli were not detected, the wells were both in background locations, the surrounding land was unsealed and vegetated and the site has a long history of agricultural use, it is considered unlikely that the groundwater in the vicinity of the wells have been impacted by sewage contamination.

Based on the above it is not considered that there is sufficient evidence to strongly support a finding of Pre-existing Contamination due to concentrations of faecal coliforms and E.coli at the targeted locations. The reported faecal coliforms and E.coli results were observed in two areas of the site which were selected as background locations.

17 Conclusions

Several AECs were identified in the PESA relating to the TDS (ES Ref.4) as having potential to be Pre-Existing Contamination. These are numbered AEC 1-7, not including the Background areas. The following conclusions have been made with regards to the results of the TDS APECS on each of the AECs as they pertain to the project objectives detailed in Section 1.2 of this report.

Based on the results and limitations of the AGLM APECS, ES makes the following conclusions.

17.1 AEC 1: Septic Tanks

No CoPC were detected in AEC 1 exceeding the adopted soil assessment criteria (SAC) within the scope of the investigation completed as part of the TDS APECS.

17.2 AEC 2: Residential Compound.

ES considers, based on the site history and the length of time since Completion, that the impacts detected in soil in AEC 2 are predominantly Pre-existing Contamination.

17.3 AEC 3: Abandoned Motor Vehicles

No CoPC were detected in AEC 3 exceeding the adopted SAC.AEC 4: Mounds / Potentially Stockpiled Material

No CoPC were detected in AEC 4 exceeding the adopted SAC.

17.4 AEC 5: Dumped Waste

ES considers, based on observations of past practices and the volume, extent and weathering of the dumped waste piles, that the waste piles were present as at Completion. Accordingly, the soil and groundwater impacts detected on AEC 5, which are considered to be associated with the presence of the waste piles, are considered by ES to be predominantly Pre-Existing Contamination.

17.5 AEC 6: Dam and Stockpiled Material

Soil samples collected from the stockpiled material did not exceed the adopted SAC for any analyte.

Similarly, sediment samples collected from the dam did not exceed the Sediment Assessment Criteria (SDAC) for any analyte.

17.6 AEC 7: Stockpiled Material Encroaching TDS-2 (Eastern Boundary from Adjacent Property)

ES considers that the stockpiled materials located on the adjoining property which have encroached across the eastern boundary of TDS-2 in the vicinity of AEC 7 were placed or encroached prior to Completion. Accordingly, ES considers that the impacts detected from these stockpiles is Pre-Existing Contamination.

17.7 Asbestos

That asbestos was not detected in soil does not mean that asbestos is not present on the site, particularly in or around waste piles, or stockpiled materials; however, based on the results of the TDS APECS, widespread asbestos impacts in soils across the TDS are unlikely.

17.8 Microbial Impacts

The reported faecal coliforms and E.coli results were observed in two other areas of the site which were selected as background locations, indicating past impacts from agricultural or anthropogenic sources.

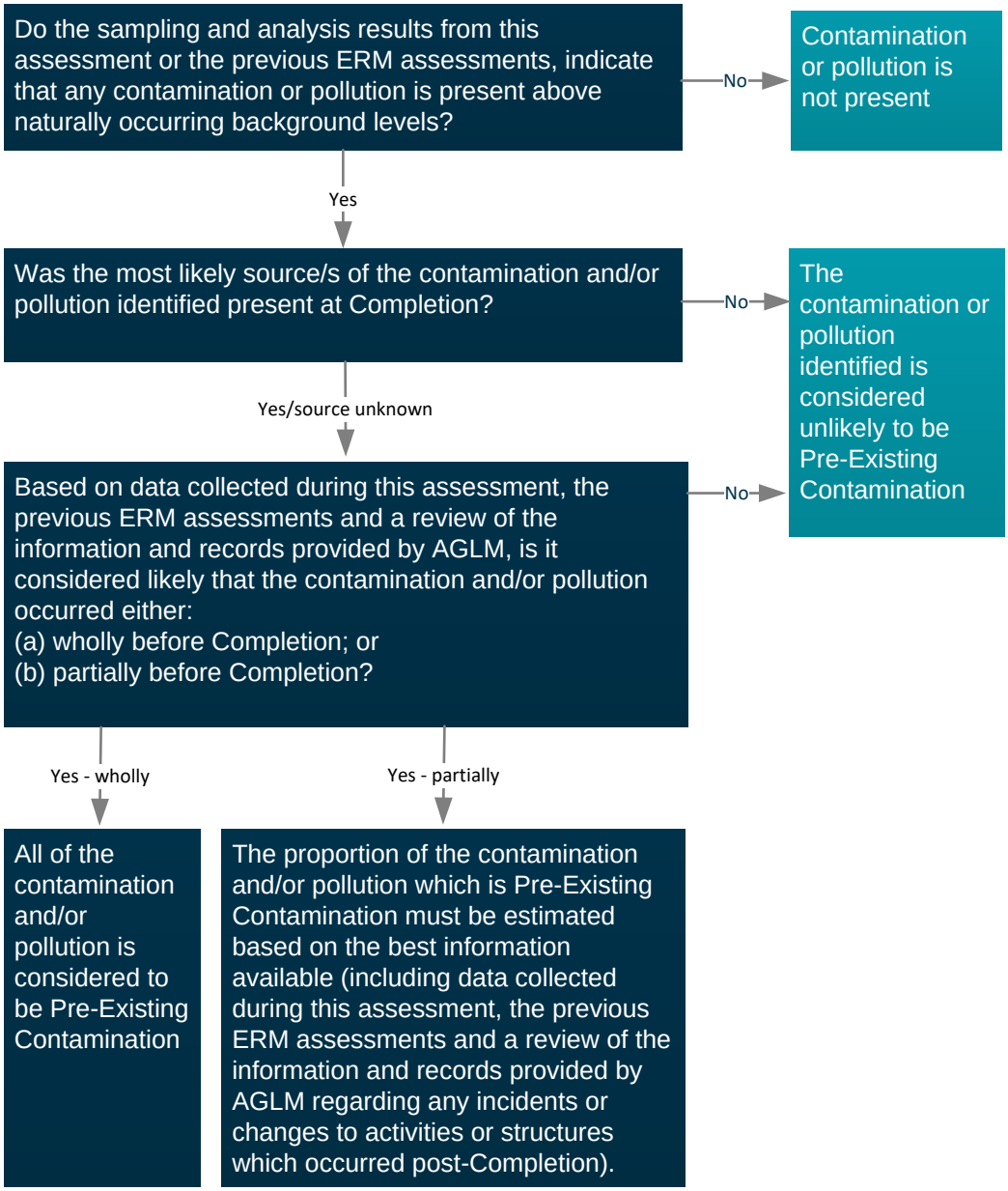
18 References

1. AGLM *Specification: Additional Pre-Existing Contamination Study, Bayswater and Liddell Power Stations, April 2015.*
2. Environmental Strategies (June 2015) - *Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Sampling, Analysis and Quality Plan to Identify Pre-Existing Contamination Prepared for AGL Macquarie; 15092RP01_SAQP.*
3. NSW Environment Protection Authority (EPA) (2000) *Guidelines for Consultants Reporting on Contaminated Sites.*
4. Environmental Strategies (2016) *Phase 1 Preliminary Environmental Site Assessment; Tomago Development Site, NSW; 15107Phase 1-Draft Rev.2.*
5. Environmental Strategies – *Tomago Development Site Sampling Analysis and Quality Plan, Prepared for AGL Macquarie; 15107RP02_Tomago_SAQP Draft, November 2015.*
6. National Environment Protection Council (1999) National Environmental Protection Measure 1999 as amended 2013 – *Assessment of Site Contamination. Schedule B(2) Guideline on Site Characterisation (NEPC 2013)*
7. NSW DECC (2006) *Guidelines for the NSW Site Auditor Scheme (2nd Edition)*
8. NSW EPA (1995) *Sampling Design Guidelines*
9. NSW EPA (2000) *Guidelines for Consultants Reporting on Contaminated Sites*
10. Australian/New Zealand Standard, AN/NZS 4360:2004, *Risk Management – Principles and guidelines*
11. Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) *Australian New Zealand Australian and New Zealand Guidelines for Fresh and Marine Water Quality*
12. Australian and New Zealand Environment and Conservation Council (ANZECC, 2000) *Interim Sediment Quality Guideline Trigger Values*
13. NSW DEC (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*
14. VIC EPA (2006) *Publication 668, Hydrogeological Assessment (Groundwater Quality) Guidelines*
15. VIC EPA (2000) *Publication 669, Groundwater Sampling Guidelines*
16. NSW Environment Protection Authority (November 2014): Waste Classification Guidelines: Pat 1: Classification of Waste.
17. *Newcastle 1:250,000 Geological Series Sheet S1 56-2 (NSW Department of Mines, 1966)*
18. http://allwaterdata.water.nsw.gov.au/water.stm (accessed 2015).
19. National Health and Medical Research Council (2011) *Australian Drinking Water Guidelines – updated February 2016.*
20. Port Stephens Council Comprehensive Koala Plan of Management (CKPoM), June 2002.
21. Port Stephens Local Environment Plan, 2013.

APPENDIX A – AIC Summaries (Refer to Sections 16 and 17)

APPENDIX B – Pre-Existing Contamination Decision Process

Pre-Existing Contamination Decision Process



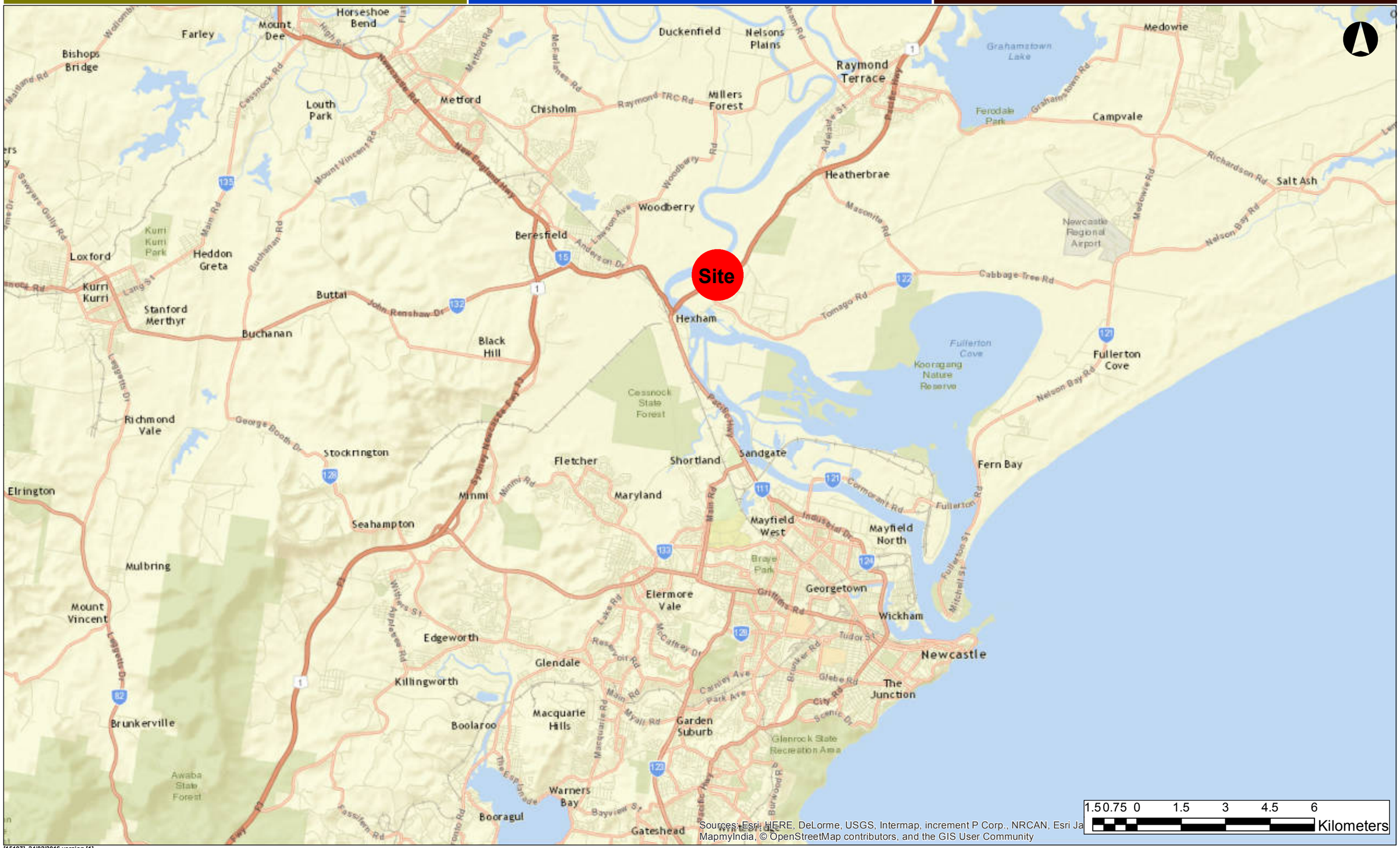
APPENDIX C – Figures

Figure 1

Site Location

Additional Pre-Existing Contamination Study

AGL Macquarie Pty Limited Tomago, NSW



[15107], 24/02/2016 version [1]

Figure 2

Areas of Environmental Concern

Additional Pre-Existing Contamination Study

AGL Macquarie Pty Limited Tomago, NSW

[15107], 11/02/2016 version [1]

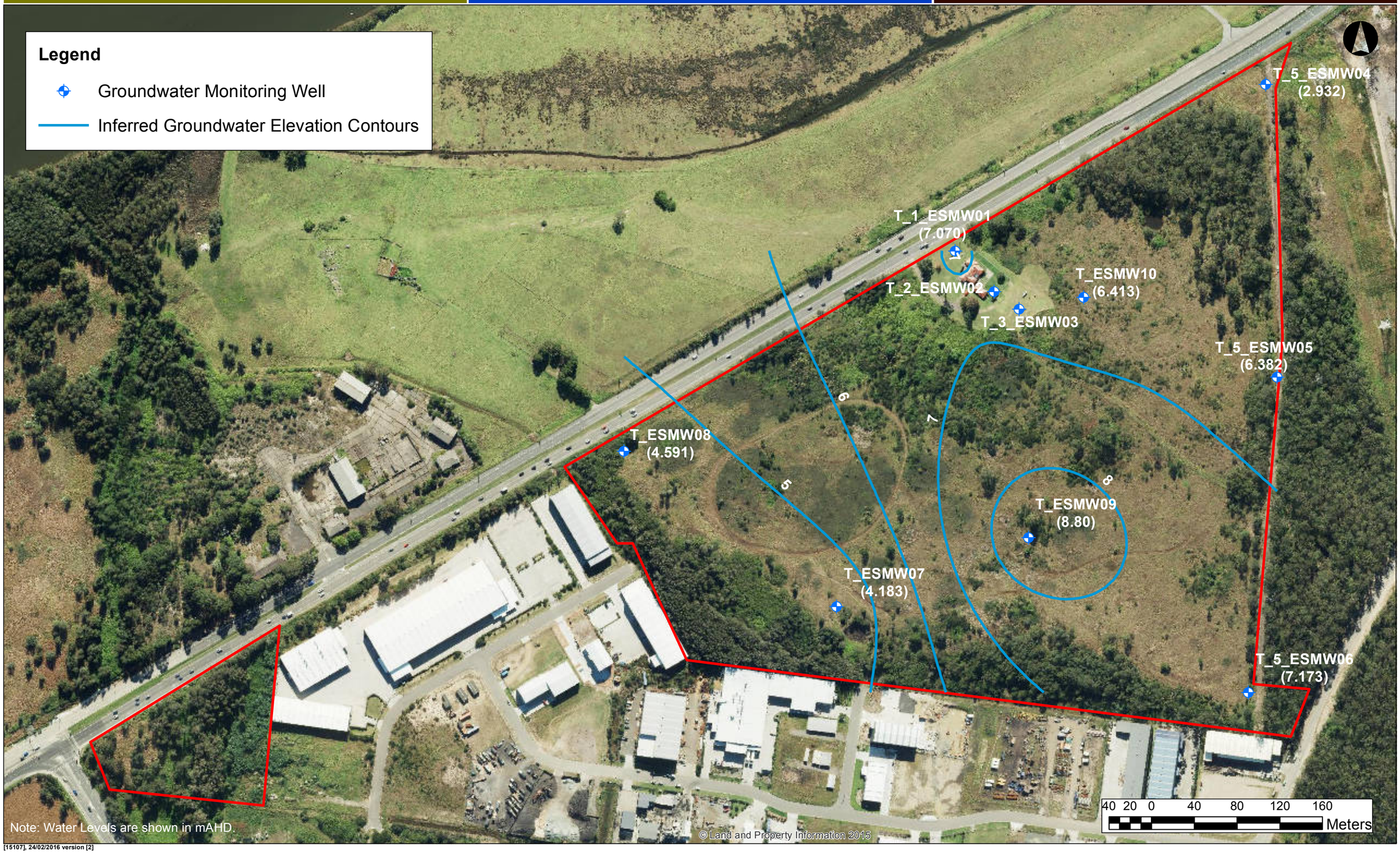
Figure 3

Inferred Groundwater Elevation Contours

Additional Pre-Existing Contamination Study

AGL Macquarie Pty Limited Tomago, NSW

EnvironmentalStrategies
PROVIDING BENEFITS



[15107], 24/02/2016 version [2]

Figure 4

Sampling Locations

Additional Pre-Existing Contamination Study

AGL Macquarie Pty Limited Tomago, NSW

EnvironmentalStrategies
PROVIDING BENEFITS

[15107], 11/02/2016 version [1]

Figure 5

Sampling Locations

Additional Pre-Existing Contamination Study

AGL Macquarie Pty Limited Tomago, NSW

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[15107], 11/02/2016 version [1]

APPENDIX D – Summary Results Tables

Summary of Results Compared to Adopted Assessment Criteria

					EW_EPA8100_LL	Metals																				Inorganics		BTEX							TRH					TPH						
			Temperature	PURGE VOLUME	Total PAH (18)	Arsenic	Arsenic (Filtered)	Boron	Boron (Filtered)	Cadmium	Cadmium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Redox	Dissolved Oxygen	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			°C	L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.1	1	1	5	5	0.1	0.1	1	1	1	1	1	1	0.05	0.05	1	1	1	1	5	5			0.5	0.5	0.5	1	0.5	1.5	3	50	50	60	500	500	200	40	50	200	200	450	650
NEPM 2013 B1 Table 1C GILs, Fresh Waters(A)						13	13	370	370	0.2	0.2	1	1	1.4	1.4	3.4	3.4	0.06	0.06	11	11	5	5	8	8			950				350														
NEPM 2013 B1 Table 1C GILs, Marine Waters(A)										0.7	0.7	4.4	4.4	1.3	1.3	4.4	4.4	0.1	0.1	7	7			15	15			500																		
Location_Code	**Field_ID**	**Sampled_Date_Time**																																												
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	<1	<1	-	-	<0.1	<0.1	2	<1	<1	<1	1	<1	<0.05	<0.05	2	<1	-	-	30	28	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	20.3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124.7	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	-	-	-	12	5	-	-	0.2	0.1	8	<1	17	<1	18	1	<0.05	<0.05	33	31	-	-	130	130	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	330	<200	<450	<650
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	19.9	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.6	1.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	7	4	-	-	1	0.8	8	1	50	42	31	19	0.05	<0.05	88	81	-	-	650	500	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	19.9	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	1.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	-	-	-	13	7	-	-	2.2	2.1	9	<1	27	17	45	33	0.09	<0.05	150	140	-	-	870	780	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	18.4	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	282.6	2.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	25.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115.1	5.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	-	-	<0.1	2	1	42	36	<0.1	<0.1	2	<1	4	5	5	2	0.07	<0.05	3	3	2	<1	54	43	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	3	3	-	-	0.1	0.1	2	<1	2	3	13	11	<0.05	<0.05	43	42	-	-	99	99	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	17.7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414.2	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	<1	<1	-	-	<0.1	<0.1	3	<1	1	<1	2	<1	<0.05	<0.05	2	2	-	-	15	11	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	17.4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235.9	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	3	3	-	-	0.1	<0.1	1	<1	5	5	7	7	<0.05	<0.05	45	41	-	-	97	56	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	17.7	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254.9	1.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	8	5	-	-	0.4	0.4	11	6	33	27	32	22	<0.05	<0.05	96	110	-	-	200	270	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	210	<200	<450	<650
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	18.7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	249	5.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	-	-	1.3	3	2	98	73	<0.1	<0.1	4	1	11	2	9	1	0.11	0.07	9	4	<1	<1	99	170	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-14	1.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																														
Number of Results			10	8	2	10	10	2	2	10	10	10	10	10	10	10	10	10	10	10	10	2	2	10	10	10	10	10	10	10	10	10	4	4	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects			10	8	1	8	8	2	2	6	5	10	3	9	7	10	8	4	1	10	9	1	0	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Minimum Concentration			17.4	3	<0.1	<1	<1	42	36	<0.1	<0.1	1	<1	<1	<1	1	<1	<0.05	<0.05	2	<1	<1	<1	15	11	-14	0.36	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
Minimum Detect			17.4	3	1.3	2	1	42	36	0.1	0.1	1	1	1	2	1	1	0.05	0.07	2	2	2	ND	15	11	ND	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210	ND	ND	ND
Maximum Concentration			25.1	8	1.3	13	7	98	73	2.2	2.1	11	6	50	42	45	33	0.11	0.07	150	140	2	<1	870	780	414.2	5.97	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	330	<200	<450	<650
Maximum Detect			25.1	8	1.3	13	7	98	73	2.2	2.1	11	6	50	42	45	33	0.11	0.07	150	140	2	ND	870	780	414.2	5.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	ND	ND	ND
Average Concentration			19	5.3		5.2	3.1			0.42	0.38	5	1.2	15	10	16	9.7	0.047	0.03	47	45			224	209	187	2.4	0.25	0.25	0.25	0.5	0.25	0.75	1.5	25	25	30	250	250	100	20	25	134	100	225	325
Median Concentration			18.55	5.5	0.675	3	3	70	54.5	0.1	0.075	3.5	0.5	8	4	11	4.5	0.025	0.025	38	36	1.25	0.5	99	114.5	180.3	1.755	0.25	0.25	0.25	0.5	0.25	0.75	1.5	25	25	30	250	250	100	20	25	100	100	225	325
Standard Deviation			2.3	1.6		4.6	2.2			0.69	0.65	3.6	1.7	17	14	15	11	0.032	0.014	50	49			292	249	123	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0	0	0
Number of Guideline Exceedances			0	0	0	1	0	0	0	4	3	10	3	8	7	8	5	3	1	7	6	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	1	0	0	0	4	3	10	3	8	7	8	5	3	1	7	6	0	0	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary of Results Compared to Adopted Assessment Criteria

			MAH									PAH/Phenols																			VOCs											
			1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.1	0.01	0.01	100	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 B1 Table 1C GILs, Fresh Waters(A)																										16										6500						
NEPM 2013 B1 Table 1C GILs, Marine Waters(A)																										50										1900						
Location_Code	**Field_ID**	**Sampled_Date_Time**																																								
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	0.02	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.06	0.05	0.12	<0.01	0.03	0.02	<0.01	<0.02	<0.01	0.02	<0.01	0.07	<0.01	<0.01	<0.5 - 0.14	0.8	0.32	0.06	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	0.01	0.1	0.02	0.09	0.17	0.14	0.18	0.08	0.19	0.02	0.56	<0.01	0.09	<0.5 - 0.03	2.5	0.3	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.03	0.03	<0.01	<0.01	<0.01	0.01	<0.02	<0.04	<0.02	0.02	<0.01	0.02	<0.01	<0.01	<0.02	0.1	0.03	0.03	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	0.11	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	-	-	-	-	-	-	0.03	0.04	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	0.03	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	0.02	0.05	0.14	0.21	0.08	0.06	0.01	0.29	<0.01	0.09	<0.02	1.3	0.08	0.27	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																										
Number of Results			4	4	4	4	4	4	4	4	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects			0	0	0	0	0	0	0	0	0	3	5	2	1	3	4	2	2	2	4	2	4	0	2	2	4	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.01	0.1	0.02	0.02	0.01	0.14	0.18	0.08	0.02	0.01	0.02	ND	0.09	ND	0.1	0.02	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.06	0.11	0.12	0.02	0.09	0.17	0.14	0.21	0.08	0.19	0.02	0.56	<0.01	0.09	0.14	2.5	0.32	0.5	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06	0.11	0.12	0.02	0.09	0.17	0.14	0.21	0.08	0.19	0.02	0.56	ND	0.09	0.14	2.5	0.32	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.016	0.027	0.026	0.0065	0.018	0.028	0.033	0.048	0.021	0.032	0.007	0.097	0.005	0.022	0.042	0.5	0.08	0.089	50	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Median Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.005	0.0075	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.025	0.005	50	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation			0	0	0	0	0	0	0	0	0	0.019	0.034	0.045	0.0047	0.027	0.052	0.057	0.078	0.031	0.058	0.0048	0.19	0	0.036	0.068	0.82	0.12	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary of Results Compared to Adopted Assessment Criteria

			Chlorinated Hydrocarbons																						Halogenated Hydrocarbons					Halogenated Benzenes									Field		Solvents						
			1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Conductivity (Field)	pH (Field)	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	uS/cm	pH_Units	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	4	0.5	0.5	0.5	0.5	0.5	0.3	0.5	10	5	5	1	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.5			10	5	5	0.01	0.5	0.002	2
NEPM 2013 B1 Table 1C GILs, Fresh Waters(A)																													3	85	160	260	60														
NEPM 2013 B1 Table 1C GILs, Marine Waters(A)																														20																	
Location_Code	Field_ID	Sampled_Date_Time																																													
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	293	5.22	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7763	4.76	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	8335	4.29	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12,513	4.12	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	129.9	7.82	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	9046	3.87	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1701	4.35	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	7186	4.13	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	16,768	3.87	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	483.8	7.23	-	-	-	-	-	-	-	-
Statistical Summary																																															
Number of Results			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	10	10	4	4	4	4	4	4	4
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	129.9	3.87	<10	<5	<5	<0.01	<0.5	<0.002	<2
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	129.9	3.87	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	16768	7.82	<10	<5	<5	<0.01	<0.5	<0.002	<2
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16768	7.82	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	2	0.25	0.25	0.25	0.25	0.25	0.15	0.25	5	2.5	2.5	0.5	0.25	0.25	0.25	0.25	0.15	0.25	0.25	0.25	0.25	6422	5	5	2.5	2.5	0.005	0.25	0.001	1
Median Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	2	0.25	0.25	0.25	0.25	0.25	0.15	0.25	5	2.5	2.5	0.5	0.25	0.25	0.25	0.25	0.15	0.25	0.25	0.25	0.25	7474.5	4.32	5	2.5	2.5	0.005	0.25	0.001	1
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5694	1.4	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

			MTBE	Vinyl acetate
			mg/L	µg/L
EQL			0.002	10
NEPM 2013 B1 Table 1C GILs, Fresh Waters(A)				
NEPM 2013 B1 Table 1C GILs, Marine Waters(A)				
Location_Code	**Field_ID**	**Sampled_Date_Time**		
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.002	<10
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.002	<10
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.002	<10
T_ESMW07	T_ESMW07	10/12/2015	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-
T_SW02	T_SW02	16/11/2015	<0.002	<10
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-

Statistical Summary		
Number of Results	4	4
Number of Detects	0	0
Minimum Concentration	<0.002	<10
Minimum Detect	ND	ND
Maximum Concentration	<0.002	<10
Maximum Detect	ND	ND
Average Concentration	0.001	5
Median Concentration	0.001	5
Standard Deviation	0	0
Number of Guideline Exceedances	0	0
Number of Guideline Exceedances(Detects Only)	0	0

Summary of Results Compared to Adopted Assessment Criteria

					EW_EPA8100_LL	Metals																				Inorganics		BTEX							TRH					TPH						
			Temperature	PURGE VOLUME	Total PAH (18)	Arsenic	Arsenic (Filtered)	Boron	Boron (Filtered)	Cadmium	Cadmium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Redox	Dissolved Oxygen	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			°C	L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mV	mg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.1	1	1	5	5	0.1	0.1	1	1	1	1	1	1	0.05	0.05	1	1	1	1	5	5			0.5	0.5	0.5	1	0.5	1.5	3	50	50	60	500	500	200	40	50	200	200	450	650
NEPM 2013 B1 Table 1C GILs, Drinking Water(B)						10	10	4000	4000	2	2	50	50	2000	2000	10	10	1	1	20	20	10	10					1	800	300			600														
Location_Code	Field_ID	Sampled_Date_Time																																												
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	<1	<1	-	-	<0.1	<0.1	2	<1	<1	<1	1	<1	<0.05	<0.05	2	<1	-	-	30	28	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	20.3	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	124.7	3.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	-	-	-	12	5	-	-	0.2	0.1	8	<1	17	<1	18	1	<0.05	<0.05	33	31	-	-	130	130	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	330	<200	<450	<650
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	19.9	8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	85.6	1.23	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	7	4	-	-	1	0.8	8	1	50	42	31	19	0.05	<0.05	88	81	-	-	650	500	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	19.9	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	121	1.54	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	-	-	-	13	7	-	-	2.2	2.1	9	<1	27	17	45	33	0.09	<0.05	150	140	-	-	870	780	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	18.4	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	282.6	2.18	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	25.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	115.1	5.48	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	-	-	<0.1	2	1	42	36	<0.1	<0.1	2	<1	4	5	5	2	0.07	<0.05	3	3	2	<1	54	43	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	3	3	-	-	0.1	0.1	2	<1	2	3	13	11	<0.05	<0.05	43	42	-	-	99	99	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	17.7	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	414.2	0.39	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	<1	<1	-	-	<0.1	<0.1	3	<1	1	<1	2	<1	<0.05	<0.05	2	2	-	-	15	11	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	17.4	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	235.9	0.36	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	3	3	-	-	0.1	<0.1	1	<1	5	5	7	7	<0.05	<0.05	45	41	-	-	97	56	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	17.7	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	254.9	1.37	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	8	5	-	-	0.4	0.4	11	6	33	27	32	22	<0.05	<0.05	96	110	-	-	200	270	-	-	<0.5	<0.5	<0.5	<1	<0.5	-	-	<50	<50	<60	<500	<500	<200	<40	<50	210	<200	<450	<650
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	18.7	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	249	5.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	-	-	1.3	3	2	98	73	<0.1	<0.1	4	1	11	2	9	1	0.11	0.07	9	4	<1	<1	99	170	-	-	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	17.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-14	1.97	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																														
Number of Results			10	8	2	10	10	2	2	10	10	10	10	10	10	10	10	10	10	10	10	2	2	10	10	10	10	10	10	10	10	4	4	10	10	10	10	10	10	10	10	10	10	10	10
Number of Detects			10	8	1	8	8	2	2	6	5	10	3	9	7	10	8	4	1	10	9	1	0	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0
Minimum Concentration			17.4	3	<0.1	<1	<1	42	36	<0.1	<0.1	1	<1	<1	<1	1	<1	<0.05	<0.05	2	<1	<1	<1	15	11	-14	0.36	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650
Minimum Detect			17.4	3	1.3	2	1	42	36	0.1	0.1	1	1	1	2	1	1	0.05	0.07	2	2	2	ND	15	11	ND	0.36	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	210	ND	ND	ND
Maximum Concentration			25.1	8	1.3	13	7	98	73	2.2	2.1	11	6	50	42	45	33	0.11	0.07	150	140	2	<1	870	780	414.2	5.97	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	330	<200	<450	<650
Maximum Detect			25.1	8	1.3	13	7	98	73	2.2	2.1	11	6	50	42	45	33	0.11	0.07	150	140	2	ND	870	780	414.2	5.97	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	ND	ND	ND
Average Concentration			19	5.3		5.2	3.1			0.42	0.38	5	1.2	15	10	16	9.7	0.047	0.03	47	45			224	209	187	2.4	0.25	0.25	0.25	0.5	0.25	0.75	1.5	25	25	30	250	250	100	20	25	134	100	225	325
Median Concentration			18.55	5.5	0.675	3	3	70	54.5	0.1	0.075	3.5	0.5	8	4	11	4.5	0.025	0.025	38	36	1.25	0.5	99	114.5	180.3	1.755	0.25	0.25	0.25	0.5	0.25	0.75	1.5	25	25	30	250	250	100	20	25	100	100	225	325
Standard Deviation			2.3	1.6		4.6	2.2			0.69	0.65	3.6	1.7	17	14	15	11	0.032	0.014	50	49			292	249	123	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	77	0	0	0
Number of Guideline Exceedances			0	0	0	2	0	2	0	1	1	0	0	0	0	5	4	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	2	0	0	0	1	1	0	0	0	0	5	4	0	0	6	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary of Results Compared to Adopted Assessment Criteria

			MAH									PAH/Phenols																		VOCs													
			1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.1	0.01	0.01	100	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
NEPM 2013 B1 Table 1C GILs, Drinking Water(B)										30								0.01																				30				3	
Location_Code	**Field_ID**	**Sampled_Date_Time**																																									
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	**0.02**	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.06**	**0.05**	**0.12**	<0.01	**0.03**	**0.02**	<0.01	<0.02	<0.01	**0.02**	<0.01	**0.07**	<0.01	<0.01	<0.5 - 0.14	**0.8**	**0.32**	**0.06**	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	**0.01**	**0.1**	**0.02**	**0.09**	**0.17**	**0.14**	**0.18**	**0.08**	**0.19**	**0.02**	**0.56**	<0.01	**0.09**	<0.5 - 0.03	**2.5**	**0.3**	**0.5**	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	**0.03**	**0.03**	<0.01	<0.01	<0.01	**0.01**	<0.02	<0.04	<0.02	**0.02**	<0.01	**0.02**	<0.01	<0.01	<0.02	**0.1**	**0.03**	**0.03**	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	**0.11**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	-	-	-	-	-	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	-	-	-	-	-	-	**0.03**	**0.04**	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	**0.03**	<0.01	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	**0.02**	**0.05**	**0.14**	**0.21**	**0.08**	**0.06**	**0.01**	**0.29**	<0.01	**0.09**	<0.02	**1.3**	**0.08**	**0.27**	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																											
Number of Results			4	4	4	4	4	4	4	4	4	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects			0	0	0	0	0	0	0	0	0	3	5	2	1	3	4	2	2	2	4	2	4	0	2	2	4	6	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.03	0.01	0.1	0.02	0.02	0.01	0.14	0.18	0.08	0.02	0.01	0.02	ND	0.09	ND	0.1	0.02	0.03	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.06	0.11	0.12	0.02	0.09	0.17	0.14	0.21	0.08	0.19	0.02	0.56	<0.01	0.09	0.14	2.5	0.32	0.5	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	0.06	0.11	0.12	0.02	0.09	0.17	0.14	0.21	0.08	0.19	0.02	0.56	ND	0.09	0.14	2.5	0.32	0.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.016	0.027	0.026	0.0065	0.018	0.028	0.033	0.048	0.021	0.032	0.007	0.097	0.005	0.022	0.042	0.5	0.08	0.089	50	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Median Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.005	0.0075	0.005	0.005	0.005	0.005	0.005	0.01	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.05	0.025	0.005	50	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation			0	0	0	0	0	0	0	0	0	0.019	0.034	0.045	0.0047	0.027	0.052	0.057	0.078	0.031	0.058	0.0048	0.19	0	0.036	0.068	0.82	0.12	0.17	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Summary of Results Compared to Adopted Assessment Criteria

Location_Code	Field_ID	Sampled_Date_Time	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
			Chlorinated Hydrocarbons																			
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	4	0.5	0.5	0.5	0.5	0.5	0.3
NEPM 2013 B1 Table 1C GILs, Drinking Water(B)								3								4	0.7		50			0.3
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																						
Number of Results			4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	2	0.25	0.25	0.25	0.25	0.25	0.15
Median Concentration			0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	2	0.25	0.25	0.25	0.25	0.25	0.15
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	4	0	0	0	0	0	0	0	4	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Location_Code	Field_ID	Sampled_Date_Time	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Conductivity (Field)	pH (Field)	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
			Halogenated Hydrocarbons					Halogenated Benzenes									Field		Solvents								
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	uS/cm	pH_Units	µg/L	µg/L	µg/L	mg/L	µg/L	mg/L	µg/L	mg/L	µg/L
EQL			0.5	10	5	5	1	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.5			10	5	5	0.01	0.5	0.002	2	0.002	10
NEPM 2013 B1 Table 1C GILs, Drinking Water(B)				1				30	30	1500		40				300											
T_1_ESMW01	T_1_ESMW01	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**293**	**5.22**	-	-	-	-	-	-	-	-	-
T_5_ESMW04	T_5_ESMW04	10/12/2015	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7763**	**4.76**	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**8335**	**4.29**	-	-	-	-	-	-	-	-	-
T_5_ESMW06	T_5_ESMW06	9/12/2015	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**12,513**	**4.12**	-	-	-	-	-	-	-	-	-
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**129.9**	**7.82**	-	-	-	-	-	-	-	-	-
T_6_SW01	T_6_SW01	16/11/2015	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
T_ESMW07	T_ESMW07	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**9046**	**3.87**	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**1701**	**4.35**	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**7186**	**4.13**	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10	15/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**16,768**	**3.87**	-	-	-	-	-	-	-	-	-
T_SW02	T_SW02	16/11/2015	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	-	-	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**483.8**	**7.23**	-	-	-	-	-	-	-	-	-
Statistical Summary																											
Number of Results			4	4	4	4	4	4	4	4	4	4	4	4	4	4	10	10	4	4	4	4	4	4	4	4	4
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	10	10	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	129.9	3.87	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	129.9	3.87	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	16768	7.82	<10	<5	<5	<0.01	<0.5	<0.002	<2	<0.002	<10
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	16768	7.82	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.25	5	2.5	2.5	0.5	0.25	0.25	0.25	0.25	0.15	0.25	0.25	0.25	0.25	6422	5	5	2.5	2.5	0.005	0.25	0.001	1	0.001	5
Median Concentration			0.25	5	2.5	2.5	0.5	0.25	0.25	0.25	0.25	0.15	0.25	0.25	0.25	0.25	7474.5	4.32	5	2.5	2.5	0.005	0.25	0.001	1	0.001	5
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	5694	1.4	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

EQL
NEPM 2013 B1 Table 1C GILs, Drinking Water(B)

Location_Code	Field_ID	Sampled_Date_Time
T_1_ESMW01	T_1_ESMW01	15/12/2015
T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015
T_5_ESMW04	T_5_ESMW04	10/12/2015
T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015
T_5_ESMW05	T_5_ESMW05	15/12/2015
T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015
T_5_ESMW06	T_5_ESMW06	9/12/2015
T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015
T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015
T_6_SW01	T_6_SW01	16/11/2015
T_ESMW07	T_ESMW07	10/12/2015
T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015
T_ESMW08	T_ESMW08	15/12/2015
T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015
T_ESMW09	T_ESMW09	15/12/2015
T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015
T_ESMW10	T_ESMW10	15/12/2015
T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015
T_SW02	T_SW02	16/11/2015
T_SW02	T_SW02_1_17 Nov 15	17/11/2015

Statistical Summary
Number of Results
Number of Detects
Minimum Concentration
Minimum Detect
Maximum Concentration
Maximum Detect
Average Concentration
Median Concentration
Standard Deviation
Number of Guideline Exceedances
Number of Guideline Exceedances(Detects Only)

Site_ID	SDG	Sample_Type	Field_ID	Sampled_Date_Time	EW_EPA8100_LL	Metals																					BTEX							TRH					TPH							
					Total PAH (18)	Arsenic	Arsenic (Filtered)	Boron	Boron (Filtered)	Cadmium	Cadmium (Filtered)	Chromium (III+VI)	Chromium (III+VI) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Mercury	Mercury (Filtered)	Nickel	Nickel (Filtered)	Selenium	Selenium (Filtered)	Zinc	Zinc (Filtered)	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	1,2,4-trimethylbenzene
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.1	1	1	5	5	0.1	0.1	1	1	1	1	1	1	0.05	0.05	1	1	1	1	5	5	0.5	0.5	0.5	1	0.5	1.5	3	50	50	60	500	500	200	40	50	200	200	450	650	0.5
ANZECC 2000 FW 95%						13	13	370	370	0.2	0.2	1	1	1.4	1.4	3.4	3.4	0.6	0.6	11	11	11	11	8	8	950				350																
Recreational water quality and aesthetics						50	50	1000	1000	5	5	50	50	1000	1000	50	50	1	1	100	100	10	10	5000	5000	10																			
15092_Tomago	SE146247-1	Normal	T_6_SW01	16/11/2015	<0.1	2	1	42	36	<0.1	<0.1	2	<1	4	5	5	2	0.07	<0.05	3	3	2	<1	54	43	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650	<0.5
15092_Tomago	SE146247-1	Normal	T_SW02	16/11/2015	1.3	3	2	98	73	<0.1	<0.1	4	1	11	2	9	1	0.11	0.07	9	4	<1	<1	99	170	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650	<0.5

Statistical Summary

Number of Results	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of Detects	1	2	2	2	2	0	0	2	1	2	2	2	2	2	1	2	2	1	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	2	1	42	36	<0.1	<0.1	2	<1	4	2	5	1	0.07	<0.05	3	3	<1	<1	54	43	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650	<0.5			
Minimum Detect	1.3	2	1	42	36	ND	ND	2	1	4	2	5	1	0.07	0.07	3	3	2	ND	54	43	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	1.3	3	2	98	73	<0.1	<0.1	4	1	11	5	9	2	0.11	0.07	9	4	2	<1	99	170	<0.5	<0.5	<0.5	<1	<0.5	<1.5	<3	<50	<50	<60	<500	<500	<200	<40	<50	<200	<200	<450	<650	<0.5			
Maximum Detect	1.3	3	2	98	73	ND	ND	4	1	11	5	9	2	0.11	0.07	9	4	2	ND	99	170	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																													
Median Concentration	0.675	2.5	1.5	70	54.5	0.05	0.05	3	0.75	7.5	3.5	7	1.5	0.09	0.0475	6	3.5	1.25	0.5	76.5	106.5	0.25	0.25	0.25	0.5	0.25	0.75	1.5	25	25	30	250	250	100	20	25	100	100	225	325	0.25			
Standard Deviation																																													
Number of Guideline Exceedances	0	0	0	0	0	0	0	2	1	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	2	1	2	2	2	0	0	0	0	0	0	0	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

Site_ID	SDG	Sample_Type	Field_ID	Sampled_Date_Time	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane
					MAH								PAH/Phenols																		VOCs											
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.1	0.01	0.01	100	1	1	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
ANZECC 2000 FW 95%																											16										6500				
Recreational water quality and aesthetics																			0.01																				0.3		
15092_Tomago	SE146247-1	Normal	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
15092_Tomago	SE146247-1	Normal	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	0.02	0.05	0.14	0.21	0.08	0.06	0.01	0.29	<0.01	0.09	<0.02	1.3	0.08	0.27	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Statistical Summary

	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(b+k)fluoranthene	Benzo(g,h,i)perylene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane
Number of Results	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.02	<0.1	<0.01	<0.01	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	0.05	0.14	0.21	0.08	0.06	0.01	0.29	ND	0.09	ND	1.3	0.08	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.01	<0.01	<0.01	<0.01	0.02	0.05	0.14	0.21	0.08	0.06	0.01	0.29	<0.01	0.09	<0.02	1.3	0.08	0.27	<100	<1	<1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.02	0.05	0.14	0.21	0.08	0.06	0.01	0.29	ND	0.09	ND	1.3	0.08	0.27	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																						
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.005	0.005	0.005	0.005	0.0125	0.0275	0.0725	0.11	0.0425	0.0325	0.0075	0.1475	0.005	0.0475	0.01	0.675	0.0425	0.1375	50	0.5	0.5	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Standard Deviation																																						
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

Site_ID	SDG	Sample_Type	Field_ID	Sampled_Date_Time	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile
					Chlorinated Hydrocarbons																							Halogenated Hydrocarbons					Halogenated Benzenes									Solve				
					µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	µg/L
EQL					0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	5	0.5	5	0.5	0.5	0.5	4	0.5	0.5	0.5	0.5	0.5	0.3	0.5	10	5	5	1	0.5	0.5	0.5	0.5	0.3	0.5	0.5	0.5	0.5	10	5	5	0.01	0.5
ANZECC 2000 FW 95%																																	10	170	160	260	60										
Recreational water quality and aesthetics						10							3										30	10																							
15092_Tomago	SE146247-1	Normal	T_6_SW01	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<0.01	<0.5
15092_Tomago	SE146247-1	Normal	T_SW02	16/11/2015	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<0.01	<0.5

Statistical Summary

Number of Results	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<0.01	<0.5
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<5	<0.5	<5	<0.5	<0.5	<0.5	<4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<10	<5	<5	<1	<0.5	<0.5	<0.5	<0.5	<0.3	<0.5	<0.5	<0.5	<0.5	<10	<5	<5	<0.01	<0.5
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																															
Median Concentration	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	2.5	0.25	2.5	0.25	0.25	0.25	2	0.25	0.25	0.25	0.25	0.25	0.15	0.25	5	2.5	2.5	0.5	0.25	0.25	0.25	0.25	0.15	0.25	0.25	0.25	0.25	5	2.5	2.5	0.005	0.25
Standard Deviation																																															
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

					nts			
					Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
					mg/L	µg/L	mg/L	µg/L
EQL					0.002	2	0.002	10
ANZECC 2000 FW 95%								
Recreational water quality and aesthetics								
Site_ID	**SDG**	**Sample_Type**	**Field_ID**	**Sampled_Date_Time**				
15092_Tomago	SE146247-1	Normal	T_6_SW01	16/11/2015	<0.002	<2	<0.002	<10
15092_Tomago	SE146247-1	Normal	T_SW02	16/11/2015	<0.002	<2	<0.002	<10
Statistical Summary								
Number of Results					2	2	2	2
Number of Detects					0	0	0	0
Minimum Concentration					<0.002	<2	<0.002	<10
Minimum Detect					ND	ND	ND	ND
Maximum Concentration					<0.002	<2	<0.002	<10
Maximum Detect					ND	ND	ND	ND
Average Concentration								
Median Concentration					0.001	1	0.001	5
Standard Deviation								
Number of Guideline Exceedances					0	0	0	0
Number of Guideline Exceedances(Detects Only)					0	0	0	0

Env Stds Comments

Summary of Results Compared to Adopted Assessment Criteria

			Metals								Inorganics	BTEX							TRH						TPH						
			Arsenic	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Zinc	% Moisture	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			3	0.3	0.3	0.5	1	0.01	0.5	0.5	5000	0.1	0.1	0.1	0.2	0.1	0.3	0.6	25	25	25	25	90	120	100	20	20	45	45	110	210
NSW EPA 2014 General Solid Waste (No Leaching)			100	20			100	4	40			10	288	600			1000									650				10,000	
NSW EPA 2014 Restricted Solid Waste (No Leaching)			400	80			400	16	160			40	1152	2400			4000									2600				40,000	
Location_Code	Field_ID	Sampled_Date_Time																													
T_4_SP01A	T_4_SP01A	10/11/2015	3	<0.3	6.1	4.2	23	0.01	1.8	44	160,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
T_4_SP01B	T_4_SP01B	10/11/2015	<3	<0.3	5.5	6.7	16	<0.01	4.3	59	230,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
T_6_SP02A	T_6_SP02A	10/11/2015	4	<0.3	7.4	0.6	10	<0.01	0.6	9.9	140,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
T_6_SP02B	T_6_SP02B	10/11/2015	3	<0.3	3.8	1.6	10	0.01	0.6	6.7	120,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
T_7_SP03A	T_7_SP03A	10/11/2015	3	0.4	9	18	38	0.03	5.4	290	220,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
T_7_SP03B	T_7_SP03B	10/11/2015	12	1	610	240	59	0.08	71	140	200,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	60	60	310	<120	<100	<20	43	250	89	380	380
T_7_SP03C	T_7_SP03C	10/11/2015	11	0.6	9.4	110	140	0.02	3.9	49	110,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
Statistical Summary																															
Number of Results			7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects			6	3	7	7	7	5	7	7	7	0	0	0	0	0	0	0	0	0	1	1	1	0	0	0	1	1	1	1	1
Minimum Concentration			<3	<0.3	3.8	0.6	10	<0.01	0.6	6.7	110000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210
Minimum Detect			3	0.4	3.8	0.6	10	0.01	0.6	6.7	110000	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	60	310	ND	ND	ND	43	250	89	380	380
Maximum Concentration			12	1	610	240	140	0.08	71	290	230000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	60	60	310	<120	<100	<20	43	250	89	380	380
Maximum Detect			12	1	610	240	140	0.08	71	290	230000	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	60	310	ND	ND	ND	43	250	89	380	380
Average Concentration			5.4	0.37	93	54	42	0.023	13	86	168571	0.05	0.05	0.05	0.1	0.05	0.15	0.3	13	13	19	19	83	60	50	10	15	55	32	101	144
Median Concentration			3	0.15	7.4	6.7	23	0.01	3.9	49	160000	0.05	0.05	0.05	0.1	0.05	0.15	0.3	12.5	12.5	12.5	12.5	45	60	50	10	10	22.5	22.5	55	105
Standard Deviation			4.3	0.33	228	91	47	0.027	26	100	48452	0	0	0	0	0	0	0	0	0	18	18	100	0	0	0	12	86	25	123	104
Number of Guideline Exceedances			0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Comments

#1 Estimated Fibres <0.01

Summary of Results Compared to Adopted Assessment Criteria

			MAH									PAH	PAH/Phenols																					VOCs		
			1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Benzo(b+j)fluoranthene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs (as B(a)P TPE)	Carcinogenic PAHs (as B(a)P TPE, PEFx3)	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.8	0.1	0.1	10	1	1
NSW EPA 2014 General Solid Waste (No Leaching)										60									0.8																	
NSW EPA 2014 Restricted Solid Waste (No Leaching)										240									3.2																	
Location_Code	**Field_ID**	**Sampled_Date_Time**																																		
T_4_SP01A	T_4_SP01A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1
T_4_SP01B	T_4_SP01B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1
T_6_SP02A	T_6_SP02A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1
T_6_SP02B	T_6_SP02B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1
T_7_SP03A	T_7_SP03A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.2**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.2**	**0.2**	<0.1	**0.1**	**0.2**	<0.1	**0.3**	**0.3**	**0.3**	<0.1	<0.1	<0.1	**1.8**	<0.1	**0.3**	<10	<1	<1
T_7_SP03B	T_7_SP03B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.8**	**0.2**	**0.2**	<0.1	<0.1	<0.1	**0.8**	**0.5**	**0.2**	**0.2**	**0.5**	<0.1	**0.7**	**0.8**	**1**	<0.1	<0.1	<0.1 - 0.1	**6.6**	**1.1**	**0.9**	<10	<1	<1
T_7_SP03C	T_7_SP03C	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	**0.4**	<0.1	<0.1	<0.1	<0.1	<0.1	**0.3**	**0.2**	<0.1	**0.1**	**0.2**	<0.1	**0.3**	**0.4**	**0.3**	<0.1	<0.1	<0.1	**2.3**	**0.2**	**0.3**	<10	<1	<1

Statistical Summary

Number of Results	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects	0	0	0	0	0	0	0	0	0	3	1	1	0	0	0	3	3	1	3	3	0	3	3	3	0	0	1	3	2	3	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.2	0.2	0.2	ND	ND	ND	0.2	0.2	0.2	0.1	0.2	ND	0.3	0.3	0.3	ND	ND	ND	1.8	0.2	0.3	ND	ND	ND
Maximum Concentration	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	0.2	0.2	<0.1	<0.1	<0.1	0.8	0.5	0.2	0.2	0.5	<0.1	0.7	0.8	1	<0.1	<0.1	0.1	6.6	1.1	0.9	<10	<1	<1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.8	0.2	0.2	ND	ND	ND	0.8	0.5	0.2	0.2	0.5	ND	0.7	0.8	1	ND	ND	0.1	6.6	1.1	0.9	ND	ND	ND
Average Concentration	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.23	0.071	0.071	0.05	0.05	0.05	0.21	0.16	0.071	0.086	0.16	0.05	0.24	0.3	0.26	0.05	0.05	0.054	1.8	0.22	0.24	5	0.5	0.5
Median Concentration	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.15	0.05	0.05	0.05	0.05	0.4	0.05	0.05	5	0.5	0.5
Standard Deviation	0	0	0	0	0	0	0	0	0	0.28	0.057	0.057	0	0	0	0.28	0.17	0.057	0.056	0.17	0	0.22	0.24	0.35	0	0	0.0094	2.3	0.39	0.31	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Comments

#1 Estimated Fibres <0.01

Summary of Results Compared to Adopted Assessment Criteria

			Chlorinated Hydrocarbons																														
			1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1
NSW EPA 2014 General Solid Waste (No Leaching)			200	600	26	24		14				10							10			120					172		10	14			4
NSW EPA 2014 Restricted Solid Waste (No Leaching)			800	2400	104	96		56				40							40			480					688		40	56			16
Location_Code	**Field_ID**	**Sampled_Date_Time**																															
T_4_SP01A	T_4_SP01A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_4_SP01B	T_4_SP01B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_6_SP02A	T_6_SP02A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_6_SP02B	T_6_SP02B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_7_SP03A	T_7_SP03A	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_7_SP03B	T_7_SP03B	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
T_7_SP03C	T_7_SP03C	10/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Statistical Summary

Number of Results			7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05
Median Concentration			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Comments

#1 Estimated Fibres <0.01

Summary of Results Compared to Adopted Assessment Criteria

Location_Code	Field_ID	Sampled_Date_Time	PCBs										Halogenated Hydrocarbons					Halogenated Benzenes									Other	Solvents								
			Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Aroclor 1262	PCBs (Sum of total)	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Estimated Fibres	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	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
EQL			0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	0.1	1	1	5	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100	10	5	1	10	0.1	0.1	0.5	0.1	10
NSW EPA 2014 General Solid Waste (No Leaching)																				86		150				2000		4000								
NSW EPA 2014 Restricted Solid Waste (No Leaching)																				344		600				8000		16000								
T_4_SP01A	T_4_SP01A	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_4_SP01B	T_4_SP01B	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_6_SP02A	T_6_SP02A	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_6_SP02B	T_6_SP02B	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_7_SP03A	T_7_SP03A	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_7_SP03B	T_7_SP03B	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
T_7_SP03C	T_7_SP03C	10/11/2015	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0#1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10

Statistical Summary

Number of Results			7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.05	0.5	0.5	2.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0	5	2.5	0.5	5	0.05	0.05	0.25	0.05	5
Median Concentration			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.05	0.5	0.5	2.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0	5	2.5	0.5	5	0.05	0.05	0.25	0.05	5
Standard Deviation			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Data Comments

#1 Estimated Fibres <0.01

AGL Macquarie
15107
Tomago Development Site

Summary of Results Compared to Adopted Assessment Criteria

						Asbestos	Metals										Inorganics		BTEX							TRH						TPH				
						Asbestos fibres	Arsenic	Boron	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Selenium	Zinc	% Moisture	Fluoride	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36
						-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0	3	5	0.3	0.3	0.5	1	0.01	0.5	3	0.5	5000	0.5	0.1	0.1	0.1	0.2	0.1	0.3	0.6	25	25	25	25	90	120	100	20	20	45	45
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil							300	20000	90	300	17000	600	80	1200	700	30000																				
NEPM 2013 B1 Table 1A(1) HIL Res A Soil							100	4500	20	100	6000	300	40	400	200	7400																				
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																				
0-1m																			#1	#1	#1			#1			#1		#1							
1-2m																			#1	#1	#1			#1			#1		#1							
2-4m																			#1	#1	#1			#1			#1		#1							
>4m																			#1	#1	#1			#1			#1		#1							
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																				
0-1m																			0.5	160	55			40			45		110							
1-2m																			0.5	220	#1			60			70		240							
2-4m																			0.5	310	#1			95			110		440							
>4m																			0.5	540	#1			170			200		#1							
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																										700		1000		2500	10000					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																				
0-2m																			50	85	70			105			180[#4]		120[#5]	300	2800					
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																															
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	0[#2]	5	-	0.3	30	0.7	17	0.01	1	-	4.7	180,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	-	7	-	<0.3	13	<0.5	9	<0.01	<0.5	-	2.5	210,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	-	4	-	<0.3	10	6.3	27	0.02	1.6	-	64	210,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	-	7	-	0.4	36	0.9	14	<0.01	1.4	-	9.2	300,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	-	<3	-	0.4	7.3	13	29	0.01	3.5	-	100	220,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	-	7	-	<0.3	18	<0.5	9	<0.01	<0.5	-	3.4	220,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		0[#2]	3	-	<0.3	6.1	4.2	23	0.01	1.8	-	44	160,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		0[#2]	<3	-	<0.3	5.5	6.7	16	<0.01	4.3	-	59	230,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	0[#2]	6	-	<0.3	9.7	7.9	9	<0.01	1	-	10	180,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	-	<3	-	<0.3	5.9	<0.5	4	<0.01	<0.5	-	2.4	190,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	0[#2]	3	-	<0.3	6.5	12	9	0.02	10	-	41	160,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	-	4	-	<0.3	12	4.5	7	<0.01	3.8	-	18	170,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	0[#2]	4	-	<0.3	8	1.8	14	<0.01	0.8	-	9.6	170,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	-	4	-	<0.3	8.2	0.7	9	<0.01	0.7	-	4	110,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	0[#2]	3	-	<0.3	7.9	12	19	<0.01	5.9	-	56	110,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	720	<120	<100	<20	<20	460	320
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	-	<3	-	<0.3	4.1	4.2	11	<0.01	3.1	-	21	160,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	0[#2]	4	-	<0.3	11	9.2	16	<0.01	5.6	-	46	130,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<250	<250	7400	<1200	<1000	<20	<200	5100	2900
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	-	<3	-	<0.3	7.2	<0.5	10	<0.01	0.8	-	3.6	310,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		0[#2]	4	-	<0.3	7.4	0.6	10	<0.01	0.6	-	9.9	140,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		0[#2]	3	-	<0.3	3.8	1.6	10	0.01	0.6	-	6.7	120,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		0[#2]	3	-	0.4	9	18	38	0.03	5.4	-	290	220,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		0[#2]	12	-	1	610	240	59	0.08	71	-	140	200,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	60	60	310	<120	<100	<20	43	250	89
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		0[#2]	11	-	0.6	9.4	110	140	0.02	3.9	-	49	110,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	-	4	-	0.3	24	4.7	25	0.02	3.9	-	39	200,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	-	<3	-	<0.3	24	0.5	8	0.02	0.9	-	3.2	180,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	0[#2]	4	<5	0.6	24	11	38	0.02	6.6	<3	120	160,000	48	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	370	130	<100	<20	<20	190	280
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	-	7	<5	<0.3	9.1	0.6	7	<0.01	<0.5	<3	2.4	190,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		0[#2]	-	-	-	-	-	27	-	-	-	-	270,000	1.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		0[#2]	-	-	-	-	-	40	-	-	-	-	270,000	4.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		0[#2]	-	-	-	-	-	3	-	-	-	-	160,000	2.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		0[#2]	-	-	-	-	-	15	-	-	-	-	210,000	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		0[#2]	-	-	-	-	-	50	-	-	-	-	160,000	8.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	0[#2]	5	<5	<0.3	6.7	3.9	10	<0.01	1.9	<3	20	150,000	2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	69	54	940	<120	<100	<20	33	740	300
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	-	<3	<5	<0.3	2.3	2.4	7	<0.01	<0.5	<3	2.1	110,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	0[#2]	<3	<5	<0.3	13	0.6	12	<0.01	1.5	<3	3.3	210,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	-	<3	<5	<0.3	8.4	0.6	2	<0.01	0.7	<3	2.2	200,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	0[#2]	<3	<5	<0.3	11	4.8	27	0.01	2.3	<3	30	240,000	1.6	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	-	6	<5	<0.3	19	<0.5	13	<0.01	1.2	<3	3.2	220,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	0[#2]	4	<5	<0.3	15	0.6	14	<0.01	0.9	<3	3.9	250,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	-	<3	<5	<0.3	4	1	6	<0.01	0.6	<3	5.3	190,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	0[#2]	3	<5	<0.3	5.6	0.7	7	<0.01	<0.5	<3	3	190,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	-	<3	<5	<0.3	4.2	0.6	5	0.01	<0.5	<3	1.4	150,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	0[#2]	4	<5	0.3	19	2.9	18	0.02	2	<3	22	220,000	1.9	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	-	4	<5	<0.3	24	0.7	11	<0.01	0.9	<3	3.3	210,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	0[#2]	5	<5	<0.3	22	9.9	10	0.01	7.4	<3	27	290,000	0.7	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	-	<3	<5	<0.3	6.4	9.7	6	<0.01	1.8	<3	5.8	300,000	0.7	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45

AGL Macquarie
15107
Tomago Development Site

Summary of Results Compared to Adopted Assessment Criteria

	Asbestos	Metals										Inorganics		BTEX							TRH						TPH				
	Asbestos fibres	Arsenic	Boron	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Selenium	Zinc	% Moisture	Fluoride	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36
	-	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	0	3	5	0.3	0.3	0.5	1	0.01	0.5	3	0.5	5000	0.5	0.1	0.1	0.1	0.2	0.1	0.3	0.6	25	25	25	25	90	120	100	20	20	45	45
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil		300	20000	90	300	17000	600	80	1200	700	30000																				
NEPM 2013 B1 Table 1A(1) HIL Res A Soil		100	4500	20	100	6000	300	40	400	200	7400																				
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																															
0-1m														#1	#1	#1			#1			#1		#1							
1-2m														#1	#1	#1			#1			#1		#1							
2-4m														#1	#1	#1			#1			#1		#1							
>4m														#1	#1	#1			#1			#1		#1							
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																															
0-1m														0.5	160	55			40			45		110							
1-2m														0.5	220	#1			60			70		240							
2-4m														0.5	310	#1			95			110		440							
>4m														0.5	540	#1			170			200		#1							
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																					700		1000		2500	10000					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																															
0-2m														50	85	70			105			180#4		120#5	300	2800					

Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg	Asbestos fibres	Arsenic	Boron	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Selenium	Zinc	% Moisture	Fluoride	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	0#2	8	<5	<0.3	28	12	15	0.02	9.1	<3	34	350,000	1.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	0#2	<3	<5	<0.3	13	17	14	<0.01	3.8	<3	11	330,000	0.7	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	0#2	<3	<5	<0.3	2.2	5.8	9	<0.01	1.5	<3	32	78,000	3.4	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	-	<3	<5	<0.3	2.3	<0.5	<1	0.01	0.9	<3	1.5	41,000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	0#2	6	<5	0.5	20	21	63	0.05	11	<3	130	510,000	9.2	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	300	290	190	<120	<100	<20	49	400	<45
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	-	<3	<5	<0.3	15	3.8	6	0.01	4.7	<3	11	180,000	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		0#2	-	-	-	-	-	19	-	-	-	-	230,000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		0#2	-	-	-	-	-	21	-	-	-	-	260,000	2.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		0#2	-	-	-	-	-	17	-	-	-	-	270,000	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		0#2	-	-	-	-	-	19	-	-	-	-	290,000	1.9	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		0#2	-	-	-	-	-	18	-	-	-	-	260,000	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		0#2	-	-	-	-	-	21	-	-	-	-	240,000	2.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		0#2	-	-	-	-	-	17	-	-	-	-	220,000	2.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		0#2	-	-	-	-	-	15	-	-	-	-	230,000	3.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		0#2	-	-	-	-	-	17	-	-	-	-	290,000	2.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		0#2	-	-	-	-	-	12	-	-	-	-	200,000	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistical Summary

	Asbestos fibres	Arsenic	Boron	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Selenium	Zinc	% Moisture	Fluoride	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36
Number of Results	40	47	22	47	47	47	62	47	47	22	47	62	33	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
Number of Detects	40	30	0	10	47	41	61	20	40	0	47	62	25	0	0	0	0	0	0	0	0	0	3	3	6	1	0	0	3	6	5
Minimum Concentration	<0	<3	<5	<0.3	2.2	<0.5	<1	<0.01	<0.5	<3	1.4	41000	<0.5	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45
Minimum Detect	ND	3	ND	0.3	2.2	0.5	2	0.01	0.6	ND	1.4	41000	0.7	ND	ND	ND	ND	ND	ND	ND	ND	ND	60	54	190	130	ND	ND	33	190	89
Maximum Concentration	0	12	<5	1	610	240	140	0.08	71	<3	290	510000	48	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	300	290	7400	<1200	<1000	<20	<200	5100	2900
Maximum Detect	ND	12	ND	1	610	240	140	0.08	71	ND	290	510000	48	ND	ND	ND	ND	ND	ND	ND	ND	ND	300	290	7400	130	ND	ND	49	5100	2900
Average Concentration	0	3.8	2.5	0.22	25	12	19	0.012	4.1	1.5	32	208371	3.4	0.05	0.05	0.05	0.1	0.05	0.15	0.3	13	13	23	23	251	73	60	10	14	172	103
Median Concentration	0	4	2.5	0.15	9.4	3.8	14	0.005	1.5	1.5	10	205000	1.7	0.05	0.05	0.05	0.1	0.05	0.15	0.3	12.5	12.5	12.5	12.5	45	60	50	10	10	22.5	22.5
Standard Deviation	0	2.5	0	0.17	88	38	20	0.013	10	0	52	73174	8.3	0	0	0	0	0	0	0	0	0	46	44	1079	79	66	0	15	747	423
Number of Guideline Exceedances	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2	5	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	5	0	0	0	0	0	0

Env Stds Comments

#1:NL
#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01
#2 Asbestos Detected No

AGL Macquarie
15107
Tomago Development Site

Summary of Results Compared to Adopted Assessment Criteria

						+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	MAH									PAH	PAH/Phenols																		
								1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Benzo(b+j)fluoranthene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs (as B(a)P TPE)	Carcinogenic PAHs (as B(a)P TPE, PEFx3)	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						110	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.8	0.1	0.1
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																													3						300		
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																													3						300		
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																					
0-1m																																		#1			
1-2m																																		#1			
2-4m																																		#1			
>4m																																		#1			
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																					
0-1m																																		3			
1-2m																																		#1			
2-4m																																		#1			
>4m																																		#1			
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																					
0-2m																								0.7													
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																																
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	<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	0.3	<0.1	<0.1	<0.1	1.2	<0.1	0.3
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	0.1	<0.1	<0.1	<0.1	<0.8	<0.1	0.1
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	<0.1	<0.1	<0.1	<0.1	0.1	0.7	0.5	0.2	0.2	0.5	<0.1	0.8	0.8	1.5	<0.1	0.2	<0.1	6.5	0.4	1.3
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	<0.1	0.2	<0.1	0.3	0.4	0.5	<0.1	<0.1	<0.1	2.3	0.2	0.4
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	<110	<210	-	-	-	-	-	-	-	-	-	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.1	0.1	<0.1	<0.1	0.2	<0.1	0.2	<0.3	0.4	<0.1	<0.1	<0.1	1.7	0.1	0.4
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	780	780	-	-	-	-	-	-	-	-	-	36	0.1	<0.1	1	2.4	4.7	33	21	8.4	5.4	14	0.5	30	30	63	1	8.5	<0.1 - 0.3	280	33	49
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.3	0.1	0.2	0.3	<0.1	0.4	0.5	0.7	<0.1	0.1	<0.1	3.3	0.3	0.6
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	8100	8500	-	-	-	-	-	-	-	-	-	330	4.4	4.3	14	11	67	190	250	100	89	160	11	330	330	700	40	97	0.9 - 6.4	3200	510	600
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	0.2	0.4	0.8	0.7	0.2	0.3	0.5	<0.1	1	1	1.9	0.1	0.2	<0.1	9.3	1.2	1.7
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.2	<0.1	0.1	0.2	<0.1	0.3	0.3	0.3	<0.1	<0.1	<0.1	1.8	<0.1	0.3
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		380	380	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.8	0.2	0.2	<0.1	<0.1	<0.1	0.8	0.5	0.2	0.2	0.5	<0.1	0.7	0.8	1	<0.1	<0.1	<0.1 - 0.1	6.6	1.1	0.9
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.4	<0.1	<0.1	<0.1	<0.1	<0.1	0.3	0.2	<0.1	0.1	0.2	<0.1	0.3	0.4	0.3	<0.1	<0.1	<0.1	2.3	0.2	0.3
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	470	470	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	13	<0.1	<0.1	0.3	<0.1	0.6	7.9	9.8	6.3	3.6	3.9	1.5	15	15	6.3	0.1	7.4	<0.1	69	2.4	6.1
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	1100	1100	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	41	2.9	3.9	8.3	1.3	20	14	34	12	13	12	2.2	45	45	98	8.4	14	8.4 - 15	480	110	76
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1

Summary of Results Compared to Adopted Assessment Criteria

								MAH									PAH	PAH/Phenols																				
						+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Benzo(b+j)fluoranthene	1-Methylnaphthalene	2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs (as B(a)P TPE)	Carcinogenic PAHs (as B(a)P TPE, PEFx3)	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						110	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.8	0.1	0.1
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																												3						300		
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																												3						300		
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																				
0-1m																																	#1			
1-2m																																	#1			
2-4m																																	#1			
>4m																																	#1			
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																				
0-1m																																	3			
1-2m																																	#1			
2-4m																																	#1			
>4m																																	#1			
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																				
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																				
0-2m																						0.7														
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																															
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	<110	<210	-	-	-	-	-	-	-	-	-	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	500	500	-	-	-	-	-	-	-	-	-	0.3	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	0.3	0.2	0.2	0.2	<0.1	0.4	0.5	0.7	<0.1	0.2	<0.1	3.2	0.3	0.6
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	47	47	24	24	24	24	24	24	24	24	24	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47	47
Number of Detects	6	6	0	0	0	0	0	0	0	0	0	14	4	3	4	4	6	14	13	9	11	14	4	13	12	15	5	8	4	14	12	15
Minimum Concentration	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<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	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1
Minimum Detect	380	380	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.1	0.1	0.2	0.3	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.2	0.3	0.1	0.1	0.1	0.9	1.2	0.1	0.1
Maximum Concentration	8100	8500	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	330	4.4	4.3	14	11	67	190	250	100	89	160	11	330	330	700	40	97	15	3200	510	600
Maximum Detect	8100	8500	ND	ND	ND	ND	ND	ND	ND	ND	ND	330	4.4	4.3	14	11	67	190	250	100	89	160	11	330	330	700	40	97	15	3200	510	600
Average Concentration	289	341	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	9.1	0.21	0.23	0.55	0.36	2	5.3	6.8	2.8	2.4	4.1	0.37	9.1	9.1	19	1.1	2.8	0.38	87	14	16
Median Concentration	55	105	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.15	0.05	0.05	0.05	0.05	0.4	0.05	0.05
Standard Deviation	1182	1231	0	0	0	0	0	0	0	0	0	48	0.75	0.83	2.3	1.6	10	28	37	15	13	23	1.6	48	48	103	5.9	14	1.8	471	76	88
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	4	0	0	0	0	10	2	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6	0	0	0	0	4	0	0	0	0	10	2	0	0

Env Stds Comments

#1:NL
#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01
#2 Asbestos Detected No

Summary of Results Compared to Adopted Assessment Criteria

						VOCs			Chlorinated Hydrocarbons																											
						2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						10	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																																					
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																																					
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																					
0-2m																																					
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																															
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Summary of Results Compared to Adopted Assessment Criteria

	VOCs			Chlorinated Hydrocarbons																												
	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene
	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL	10	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	1	0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																																
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																																
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																
0-1m																																
1-2m																																
2-4m																																
>4m																																
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																
0-1m																																
1-2m																																
2-4m																																
>4m																																
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																
0-2m																																

Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																															
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05
Median Concentration	5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05
Standard Deviation	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:NL
#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01
#2 Asbestos Detected No

Summary of Results Compared to Adopted Assessment Criteria

Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg	trans-1,3-dichloropropene	Vinyl chloride	2,4-DDT	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	gamma-Chlordane	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	o,p-DDD	o,p'-DDE	trans-Nonachlor	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Diazinon	Dichlorvos	Dimethoate	Ethion
								Organochlorine Pesticides																								Organophosphorous Pesticides						
						mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.1	0.1	0.1	100	100	100	100	100	0.1	100	100	100	200	200	200	100	200	100	100	100	100	100	100	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.5	0.5	0.2
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																						20000				10000		400000						250				
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																						10000				6000		300000						160				
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																						
0-1m																																						
1-2m																																						
2-4m																																						
>4m																																						
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																						
0-1m																																						
1-2m																																						
2-4m																																						
>4m																																						
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																						
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																						
0-2m																																						
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	<0.1	<0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2

Summary of Results Compared to Adopted Assessment Criteria

						trans-1,3-dichloropropene	Vinyl chloride	2,4-DDT	4,4-DDE	a-BHC	Aldrin	b-BHC	Chlordane (cis)	gamma-Chlordane	d-BHC	DDD	DDT	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	o,p-DDD	o,p'-DDE	trans-Nonachlor	Azinophos methyl	Bromophos-ethyl	Chlorpyrifos	Diazinon	Dichlorvos	Dimethoate	Ethion
						Organochlorine Pesticides																									Organophosphorous Pesticides						
						mg/kg	mg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						0.1	0.1	0.1	100	100	100	100	100	0.1	100	100	100	200	200	200	100	200	100	100	100	100	100	100	0.1	0.1	0.1	0.2	0.2	0.2	0.5	0.5	0.5	0.2
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																						20000				10000		400000						250				
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																						10000				6000		300000						160				
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																							
0-1m																																							
1-2m																																							
2-4m																																							
>4m																																							
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																							
0-1m																																							
1-2m																																							
2-4m																																							
>4m																																							
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																							
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																							
0-2m																																							
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																																		
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	-	-	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Statistical Summary																																							
Number of Results						24	24	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration						<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<0.1	<0.1	<0.1	<100	<100	<100	<100	<100	<0.1	<100	<100	<100	<200	<200	<200	<100	<200	<100	<100	<100	<100	<100	<100	<0.1	<0.1	<0.1	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						0.05	0.05	0.05	50	50	50	50	50	0.05	50	50	50	100	100	100	50	100	50	50	50	50	50	50	0.05	0.05	0.05	0.1	0.1	0.1	0.25	0.25	0.25	0.1
Median Concentration						0.05	0.05	0.05	50	50	50	50	50	0.05	50	50	50	100	100	100	50	100	50	50	50	50	50	50	0.05	0.05	0.05	0.1	0.1	0.1	0.25	0.25	0.25	0.1
Standard Deviation						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:NL

#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.

#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.

#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.

#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01

#2 Asbestos Detected No

AGL Macquarie
15107
Tomago Development Site

Summary of Results Compared to Adopted Assessment Criteria

									PCBs											Pesticides			Halogenated Hydrocarbons					Halogenated Benzenes										Other
						Fenitrothion	Malathion	Methidathion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Aroclor 1262	PCBs (Sum of total)	Isodrin	Mirex	Parathion	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Estimated Fibres
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg
EQL						0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	0.1	0.1	0.2	0.1	1	1	5	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100	100
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																		1		20																10000	
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																		1		10																10000	
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																					
0-2m																																					
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																																
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	0[#1]
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	-	-	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-

Summary of Results Compared to Adopted Assessment Criteria

									PCBs										Pesticides			Halogenated Hydrocarbons					Halogenated Benzenes										Other
						Fenitrothion	Malathion	Methidathion	Arochlor 1016	Arochlor 1221	Arochlor 1232	Arochlor 1242	Arochlor 1248	Arochlor 1254	Arochlor 1260	Arochlor 1268	Aroclor 1262	PCBs (Sum of total)	Isodrin	Mirex	Parathion	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Hexachlorobenzene	Estimated Fibres
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	µg/kg	mg/kg
EQL						0.2	0.2	0.5	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	1	0.1	0.1	0.2	0.1	1	1	5	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	100	100
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil																		1		20																10000	
NEPM 2013 B1 Table 1A(1) HIL Res A Soil																		1		10																10000	
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand																																					
0-1m																																					
1-2m																																					
2-4m																																					
>4m																																					
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse																																					
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil																																					
0-2m																																					
Site_ID	SDG	Location_Code	Field_ID	Sampled_Date_Time	Sample_Depth_Avg																																
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	0[#1]
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0[#1]
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	-
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<100	0[#1]
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	<0.2	<0.2	<0.5	-	-	-	-	-	-	-	-	-	-	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	-
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0[#1]
Statistical Summary																																					
Number of Results						19	19	19	27	27	27	27	27	27	27	27	27	27	19	19	19	24	24	24	24	24	24	24	24	24	24	24	24	24	19	40
Number of Detects						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40
Minimum Concentration						<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	<0
Minimum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration						<0.2	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<1	<0.1	<0.1	<0.2	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<100	0
Maximum Detect						ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration						0.1	0.1	0.25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.05	0.05	0.1	0.05	0.5	0.5	2.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	50	0
Median Concentration						0.1	0.1	0.25	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.5	0.05	0.05	0.1	0.05	0.5	0.5	2.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	50	0
Standard Deviation						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)						0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:NL
#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01
#2 Asbestos Detected No

Summary of Results Compared to Adopted Assessment Criteria

						Solvents								
						Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						10	5	1	10	0.1	0.1	0.5	0.1	10
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil														
NEPM 2013 B1 Table 1A(1) HIL Res A Soil														
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil														
0-2m														
Site_ID	**SDG**	**Location_Code**	**Field_ID**	**Sampled_Date_Time**	**Sample_Depth_Avg**									
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_0.1	10/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_1_ESMW01	T_1_ESMW01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.1	10/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_2_ESMW02	T_2_ESMW02_0.5	10/11/2015	0.5	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_0.1	10/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_2_ESSB01	T_2_ESSB01_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_4_SP01A	T_4_SP01A	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_4_SP01B	T_4_SP01B	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_0.1	10/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_5_ESMW03	T_5_ESMW03_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_0.1	10/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_5_ESMW04	T_5_ESMW04_2.0	10/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESMW06	T_5_ESMW06_1.4	10/11/2015	1.4	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB03	T_5_ESSB03_1.0	10/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_5_ESSB04	T_5_ESSB04_1.0	10/11/2015	1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_6_SP02A	T_6_SP02A	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_6_SP02B	T_6_SP02B	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_7_SP03A	T_7_SP03A	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_7_SP03B	T_7_SP03B	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_7_SP03C	T_7_SP03C	10/11/2015		<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_0.1	10/11/2015	0.1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE145989-1	T_ESSB05	T_ESSB05_3.0	10/11/2015	3	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_0.1	17/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_2_ESSB02	T_2_ESSB02_2	17/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG01	T_2_SG01	17/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG02	T_2_SG02	17/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG03	T_2_SG03	17/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG04	T_2_SG04	17/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_2_SG05	T_2_SG05	19/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_0.1	17/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_5_ESMW05	T_5_ESMW05_2	17/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_0.5	16/11/2015	0.5	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESMW07	T_ESMW07_2	16/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_0.1	16/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESMW08	T_ESMW08_1	16/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_0.5	16/11/2015	0.5	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESMW09	T_ESMW09_2	16/11/2015	2	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_0.5	18/11/2015	0.5	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESMW10	T_ESMW10_1	18/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_0.1	16/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESSB06	T_ESSB06_1	16/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_0.1	18/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESSB08	T_ESSB08_1	18/11/2015	1	-	-	-	-	-	-	-	-	-

Summary of Results Compared to Adopted Assessment Criteria

						Solvents								
						Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
						mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL						10	5	1	10	0.1	0.1	0.5	0.1	10
NEPM 2013 B1 Table 1A(1) HIL Rec C Soil														
NEPM 2013 B1 Table 1A(1) HIL Res A Soil														
NEPM 2013 B1 Table 1A(3) Rec Soil HSL C for Vapour Intrusion, Sand														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 B1 Table 1A(3) Res Soil HSL A/B for Vapour Intrusion, Sand														
0-1m														
1-2m														
2-4m														
>4m														
NEPM 2013 B1 Table 1B(7) Management Limits, R/POS, coarse														
NEPM 2013 Table 1B(6) ESLs for Urban Res, Coarse Soil														
0-2m														
Site_ID	**SDG**	**Location_Code**	**Field_ID**	**Sampled_Date_Time**	**Sample_Depth_Avg**									
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_0.1	18/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESSB09	T_ESSB09_1	18/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_0.1	19/11/2015	0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_ESSB10	T_ESSB10_1	19/11/2015	1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.1	18/11/2015	0.1	-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SB07	T_SB07_0.5	18/11/2015	0.5	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
15092_Tomago	SE146247-1	T_SG01	T_SG01	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG02	T_SG02	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG03	T_SG03	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG04	T_SG04	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG05	T_SG05	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG06	T_SG06	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG07	T_SG07	18/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG08	T_SG08	19/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG09	T_SG09	19/11/2015		-	-	-	-	-	-	-	-	-
15092_Tomago	SE146247-1	T_SG10	T_SG10	19/11/2015		-	-	-	-	-	-	-	-	-

Statistical Summary

Number of Results	24	24	24	24	24	24	24	24	24
Number of Detects	0	0	0	0	0	0	0	0	0
Minimum Concentration	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration	5	2.5	0.5	5	0.05	0.05	0.25	0.05	5
Median Concentration	5	2.5	0.5	5	0.05	0.05	0.25	0.05	5
Standard Deviation	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances	0	0	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0	0	0

Env Stds Comments

#1:NL
#2:Moderate reliability. To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#3:Moderate reliability. To obtain F2 subtract napthalene from the >C10 - C16 fraction.
#4:To obtain F1 subtract the sum of BTEX concentrations from the C6 - C10 fraction.
#5:To obtain F2 subtract napthalene from the >C10 - C16 fraction.

Data Comments

#1 Estimated Fibres <0.01
#2 Asbestos Detected No

Summary of Results Compared to Adopted Assessment Criteria

			Metals										Inorganics	BTEX							TRH						TPH							MAH									PAH	
			Arsenic	Boron	Cadmium	Chromium (III+VI)	Copper	Lead	Mercury	Nickel	Selenium	Zinc	% Moisture	Benzene	Toluene	Ethylbenzene	Xylene (m & p)	Xylene (o)	Xylene Total	Total BTEX	C6-C10	C6-C10 less BTEX (F1)	C10-C16	F2-NAPHTHALENE	C16-C34	C34-C40	TRH C37-C40	C6 - C9	C10 - C14	C15 - C28	C29-C36	+C10 - C36 (Sum of total)	C10 - C40 (Sum of total)	1,2,4-trimethylbenzene	1,3,5-trimethylbenzene	Isopropylbenzene	n-butylbenzene	n-propylbenzene	p-isopropyltoluene	sec-butylbenzene	Styrene	tert-butylbenzene	Benzo(b+j)fluoranthene	1-Methylnaphthalene
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			3	5	0.3	0.3	0.5	1	0.01	0.5	3	0.5	5000	0.1	0.1	0.1	0.2	0.1	0.3	0.6	25	25	25	25	90	120	100	20	20	45	45	110	210	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
ISQG-High			***70***		***10***	***370***	***270***	***220***	***1***	***52***		***410***																																
ISQG-Low			20		1.5	80	65	50	0.15	21		200																																
Location_Code	**Field_ID**	**Sampled_Date_Time**																																										
T_6_SD01	T_6_SD01	16/11/2015	3	<5	<0.3	4.6	1.7	9	<0.01	0.8	<3	10	260,000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Statistical Summary																																												
Number of Results			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Detects			1	0	0	1	1	1	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			3	<5	<0.3	4.6	1.7	9	<0.01	0.8	<3	10	260000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Minimum Detect			3	ND	ND	4.6	1.7	9	ND	0.8	ND	10	260000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			3	<5	<0.3	4.6	1.7	9	<0.01	0.8	<3	10	260000	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	<0.6	<25	<25	<25	<25	<90	<120	<100	<20	<20	<45	<45	<110	<210	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Maximum Detect			3	ND	ND	4.6	1.7	9	ND	0.8	ND	10	260000	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																												
Median Concentration			3	2.5	0.15	4.6	1.7	9	0.005	0.8	1.5	10	260000	0.05	0.05	0.05	0.1	0.05	0.15	0.3	12.5	12.5	12.5	12.5	45	60	50	10	10	22.5	22.5	55	105	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
Standard Deviation																																												
Number of Guideline Exceedances			#####	#####	#####	#####	#####	#####	######	#####	#####	#####	#VALUE!	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####
Number of Guideline Exceedances(Detects Only)			#####	#####	#####	#####	#####	#####	######	#####	#####	#####	#VALUE!	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####

Summary of Results Compared to Adopted Assessment Criteria

			PAH/Phenols																			VOCs			Chlorinated Hydrocarbons																					
			2-methylnaphthalene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a) pyrene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Carcinogenic PAHs (as B(a)P TPE)	Carcinogenic PAHs (as B(a)P TPE, PEFx3)	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	PAHs (Sum of total)	Phenanthrene	Pyrene	2-Nitropropane	cis-1,4-Dichloro-2-butene	trans-1,4-Dichloro-2-butene	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,1-dichloroethene	1,1-dichloropropene	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Bromodichloromethane	Bromoform	Carbon tetrachloride	Chlorodibromomethane	Chloroethane	Chloroform	Chloromethane
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			0.1	0.1	0.1	0.1	0.8	0.1	0.1	10	1	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	0.1	1
ISQG-High				***0.5***	***0.64***	***1.1***	***1.6***	***1.6***			***2.8***	***0.26***			***5.1***	***0.54***		***2.1***	***45***	***1.5***	***2.6***																									
ISQG-Low				0.016	0.044	0.085	0.261	0.43			0.384	0.063			0.6	0.019		0.16	4	0.24	0.665																									
Location_Code	**Field_ID**	**Sampled_Date_Time**																																													
T_6_SD01	T_6_SD01	16/11/2015	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Statistical Summary																																															
Number of Results			1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Detects			0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Minimum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.3	<0.1	<0.1	<0.1	<0.1	<0.8	<0.1	<0.1	<10	<1	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<1
Maximum Detect			ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																															
Median Concentration			0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.1	0.15	0.05	0.05	0.05	0.05	0.4	0.05	0.05	5	0.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.05	0.5
Standard Deviation																																															
Number of Guideline Exceedances			#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####
Number of Guideline Exceedances(Detects Only)			#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####

Summary of Results Compared to Adopted Assessment Criteria

Location_Code	Field_ID	Sampled_Date_Time	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
													Halogenated Hydrocarbons					Halogenated Benzenes									Solvents								
			mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL			0.1	0.1	0.1	0.5	0.1	0.1	0.1	0.1	0.1	0.1	0.1	1	1	5	1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	10	5	1	10	0.1	0.1	0.5	0.1	10
ISQG-High																																			
ISQG-Low																																			
T_6_SD01	T_6_SD01	16/11/2015	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10

Statistical Summary

	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Dibromomethane	Dichloromethane	Hexachlorobutadiene	Trichloroethene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Vinyl chloride	1,2-dibromoethane	Bromomethane	Dichlorodifluoromethane	Iodomethane	Trichlorofluoromethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	2-chlorotoluene	4-chlorotoluene	Bromobenzene	Chlorobenzene	Methyl Ethyl Ketone	2-hexanone (MBK)	4-Methyl-2-pentanone	Acetone	Acrylonitrile	Allyl chloride	Carbon disulfide	MTBE	Vinyl acetate
Number of Results	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
Number of Detects	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Minimum Concentration	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Minimum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Maximum Concentration	<0.1	<0.1	<0.1	<0.5	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<1	<1	<5	<1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	<5	<1	<10	<0.1	<0.1	<0.5	<0.1	<10
Maximum Detect	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Average Concentration																																		
Median Concentration	0.05	0.05	0.05	0.25	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.5	2.5	0.5	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	5	2.5	0.5	5	0.05	0.05	0.25	0.05	5
Standard Deviation																																		
Number of Guideline Exceedances	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####
Number of Guideline Exceedances(Detects Only)	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####	#####

APPENDIX E – Bore Logs

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_1_ESMW1**
Project Number:	**15107**
Hole Depth:	**10.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**13.59**
Client:	**AGL Macquarie**	Top of Casing :	**13.539**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378810.6**
		Northing:	**6368765.3**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
Hand Auger		0.30				Natural	**SILT** - dark brown, non plastic, soft, uniform, low plasticity, no odour, no staining, no observed asbestos.	damp	0.0	T_1_ESMW01_0.1		Gatic
			13.0		CL		**CLAY** - dark olive red, moderately plastic, stiff, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_1_ESMW01_0.5		
		1.0 1.10							0.0	T_1_ESMW01_1.0		
Solid Flight Auger			12.0		CL		**Silty CLAY** - dark reddish olive and dark grey, moderately plastic, very stiff, uniform, no odour, no staining, no observed asbestos.	damp				
		2.0 2.30							0.0	T_1_ESMW01_2.0		
			11.0		CL		**Silty CLAY** - dark reddish grey with dark olive red, moderately plastic, hard, uniform, no odour, no staining, no observed asbestos.	damp				
		3.0							0.0	T_1_ESMW01_3.0		Backfill
			10.0									
		4.0										
			9.0									
		4.80										
		5.0 5.10			CL		**Silty CLAY** - dark orangish brown, non plastic, stiff, uniform, homogeneous, no odour, no staining, no observed asbestos.	dry to damp				
		5.30			CL							
		5.50			CL							
			8.0				**Silty CLAY** - light brown, non plastic, soft, non uniform, no odour, no staining, no observed asbestos.	dry to damp				
		6.0						damp				Bentonite
			7.0		CL		**Silty CLAY** - dark reddish grey with dark olive red, moderately plastic, hard, uniform, no odour, no staining, no observed asbestos.	dry to damp				
		7.0					**Silty CLAY** - light grey and light brown, medium stiff, uniform, trace silt, no odour, no staining, no observed asbestos.					Gravel Pack
		7.50	6.0									
		8.0					**Sandy CLAY** - light brown, non plastic, medium dense, medium, uniform, no odour, no staining.	dry to damp				
			5.0		CL							Screen
		9.0										
			4.0									
		10.00										
							End of Hole at 10.00 m					
			3.0									
		11.0										

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/02/2016**

REUMAD

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:21 PM

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_ESMW2**
Project Number:	**15107**
Hole Depth:	**6.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	***11/11/2015***
Location / Site:	**Tomago**	Ground Level :	**16.12**
Client:	**AGL Macquarie**	Top of Casing :	**16.054**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378847.0**
		Northing:	**6368727.2**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
Hand Auger		0.30	16.0		CL	Natural	**Silty CLAY** - dark brown, non plastic, very soft, non uniform, little fine to medium gravel, no odour, no staining, no observed asbestos.	dry to damp	0.1	T_2_ESMW02_0.1		Gatic
Hand Auger		0.80	15.5		CL	Natural	**Silty CLAY** - dark olive red and, moderately plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.2	T_2_ESMW02_0.5		
Solid Flight Auger		1.30	15.0		CL	Natural	**CLAY** - dark olive red with dark grey, moderately plastic, stiff to very stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.2	T_2_ESMW02_1.0		Backfill
Solid Flight Auger		2.30	14.5 / 14.0		CL	Natural	**CLAY** - dark olive grey with dark olive red, moderately plastic, stiff to very stiff, uniform, mottled, no odour, no staining, no observed asbestos.	damp	0.3	T_2_ESMW02_2.0		Bentonite
Solid Flight Auger		2.70	13.5		CL	Natural	**Sandy CLAY** - dark grey and light brown, moderately plastic, non uniform, some fine to medium sand, no odour, no staining, no observed asbestos.	damp				
Solid Flight Auger		3.80	13.0 / 12.5		CL	Natural	**Sandy CLAY** - light brown and dark grey, no odour, no staining, no observed asbestos.	damp	0.2	T_2_ESMW02_3.0		Gravel Pack
Solid Flight Auger		4.50	12.0		CL	Natural	**Silty CLAY** - light grey and dark olive red, non plastic, hard, uniform, little silty sand, no odour, no staining, no observed asbestos.	dry				
Solid Flight Auger		4.90	11.5		CL	Natural	**CLAY** - dark grey, hard, uniform, no odour, no staining, no observed asbestos.	dry				Screen
Solid Flight Auger		5.80	11.0 / 10.5			Natural	**SILTSTONE** - dark grey, fine grained, slightly weathered, high strength, no observed asbestos.	dry				
Solid Flight Auger		6.00	10.0 / 9.5		CH	Natural	**CLAY** - dark reddish brown, highly plastic, stiff, uniform, organic odour, no staining.	moist				
							End of Hole at 6.00 m					

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/02/2016**

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_ESSB1**
Project Number:	**15107**
Hole Depth:	**3.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**11/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
Solid Flight Auger		0.20			CL	Natural	**Sandy CLAY** - dark brown with light brown, non plastic, very soft, non uniform, little fine to medium gravel, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_2_ESSB01_0.1
		0.5			CL		**CLAY** - dark brown, non plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_2_ESSB01_0.5
		0.80			CL		**CLAY** - dark olive red with dark grey, moderately plastic, stiff to very stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.4	T_2_ESSB01_1.0
		1.0								
		1.5								
		1.60			CL		**CLAY** - dark grey and light brown, moderately plastic, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.1	T_2_ESSB01_2.0
		2.0								
		2.5								
		3.00							0.1	T_2_ESSB01_3.0
		3.5					**End of Hole at 3.00 m**			
		4.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD	Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
	Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:24 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_ESSB2**
Project Number:	**15107**
Hole Depth:	**3.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
Solid Flight Auger		0.5			CL	Natural	**CLAY** - dark brown, slightly plastic, medium stiff, no odour, no staining.	dry to damp	0.0	T_2_ESSB02_0.1
									0.0	T_2_ESSB02_0.5
		0.80								
		1.0			CL		**CLAY** - dark reddish brown with dark grey, moderately plastic, medium stiff, uniform, mottled, no odour, no staining.	dry to damp	0.0	T_2_ESSB02_1.0
		1.5								
		2.0							0.1	T_2_ESSB02_2.0
		2.20								
		2.5			CL		**Silty CLAY** - dark grey, slightly plastic, no staining, no observed asbestos.	dry		
		3.00							0.0	T_2_ESSB02_3.0
		3.5					**End of Hole at 3.00 m**			
		4.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:25 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_SG1**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Clayey SAND, dark brown, low, loose, fine, subangular, organic odour, no staining, organics present, no ACM visible,.	slightly moist	0.1	T_2_SG01
							End of Hole at 0.10 m			
		0.2								
		0.4								
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **17/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **17/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:26 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_SG2**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.10				Fill	**FILL** - Clayey Gravelly SAND, dark brown, loose, fine, subangular, hydrocarbon odour, no staining, grass dead or not present, no ACM visible, organics present.	slightly moist	0.1	T_2_SG02
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **17/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **17/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:27 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_SG3**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.10				Fill	**FILL** - SAND, dark whitish brown, very loose to loose, fine, subangular, organic odour, no staining, organics present, no ACM visible, grass becoming bare, sample taken adjacent to septic tank.	slightly moist	0.1	T_2_SG03
							End of Hole at 0.10 m			

0.2, 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **17/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **17/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:28 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_SG4**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Gravelly SAND, brown, loose, fine to medium, subangular, chemical odour, no staining, no ACM visible, mottled with orange and dark brown, organics present.	slightly moist	2.5	T_2_SG04_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **17/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **17/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:28 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_2_SG5**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**19/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Gravelly SAND, whitish brown, loose to medium dense, medium, subangular, chemical odour, no staining, no observed ACM, organics present, rubbish and insulation fibres present.	slightly moist	1.7	T_2_SG05_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **19/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **19/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:29 PM

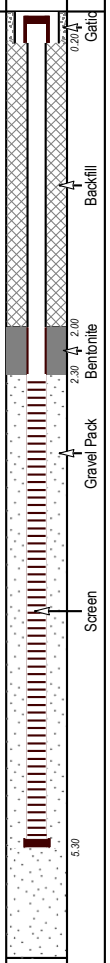
Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_3_ESMW03**
Project Number:	**15107**
Hole Depth:	**6.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**18.11**
Client:	**AGL Macquarie**	Top of Casing :	**18.020**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378870.4**
		Northing:	**6368710.8**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm
Hand Auger		0.20	18.0			Fill	**FILL** - SAND, light brown, loose, medium, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0
		0.80	17.5		CL	Natural	**Silty CLAY** - dark reddish brown, moderately plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0
Solid Flight Auger		1.60	17.0 / 16.5		CL		**Silty CLAY** - dark reddish brown, moderately plastic, medium stiff, uniform, little fine to medium sand, no odour, no staining, no observed asbestos.	dry to damp	0.1
		2.30	16.0		CL		**Silty CLAY** - light orangish grey with light brownish, non plastic, soft, uniform, stratified, no odour, no staining.	dry to damp	0.1
		3.10	15.5 / 15.0		SM		**Silty SAND** - light yellowish brown, medium dense, fine grained, uniform, little silty clay, no odour, no staining, no observed asbestos.	dry	0.1
		4.80	14.5 / 14.0 / 13.5		SM		**Silty SAND** - dark yellowish brown with light grey, medium dense, fine grained, uniform, little silty clay, no odour, no staining, no observed asbestos.	dry	
		5.40	13.0		SM		**Silty SAND** - dark yellowish brown with light grey, medium dense, fine grained, uniform, little silty clay, no odour, no staining, no observed asbestos.	damp to moist	
		6.00	12.5		CL		**Silty CLAY** - dark grey, moderately plastic, medium stiff, non uniform, and coarse gravel, no odour, no staining, no observed asbestos.	moist	
		7.0	12.0 / 11.5				**End of Hole at 6.00 m**		



Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **9/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **9/02/2016**

REUMAD

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_4_SP01A**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - CLAY, dark brown, low, stiff, fine to medium, fine to medium sand, organic odour, no staining.	dry	0.0	T_4_SP01A_0.2
		0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0					**End of Hole at 0.20 m**			

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:32 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_4_SP01B**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - SAND, dark brown, loose, fine to medium, subangular, organic odour, no staining, some ant(?) eggs present.	slightly moist	0.1	T_4_SP01B_0.2
							End of Hole at 0.20 m			

Depth scale: 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:32 PM

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_5_ESMW4**
Project Number:	**15107**
Hole Depth:	**10.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**4.26**
Client:	**AGL Macquarie**	Top of Casing :	**5.138**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**379101.5**
		Northing:	**6368921.1**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
Hand Auger		0.05	4.0		ML	Natural	**ASPHALT** - Grass.	moist to wet	0.3	T_5_ESMW04_0.1		Gatic
		0.30			ML		**SILT** - dark brownish black, non plastic, soft, non uniform, trace fine to coarse gravel, no odour, no staining, no observed asbestos.	moist	0.3	T_5_ESMW04_0.5		
		0.80	1.0		CL		**SILT** - dark brownish black, slightly plastic, soft, uniform, no odour, no staining, no observed asbestos.	damp	0.2	T_5_ESMW04_1.0		
Solid Flight Auger		1.40	3.0		CL		**CLAY** - dark brown and light reddish, moderately plastic, very stiff, uniform, no odour, no staining, no observed asbestos.	damp	0.3	T_5_ESMW04_2.0		
		2.0	2.0				**CLAY** - dark brown and light brownish, moderately plastic, very stiff, uniform, little fine sand, mottled, no odour, no staining, no observed asbestos.	dry to damp				
		2.50					**SILTSTONE** - light yellowish brown, coarse grained, fresh, high strength, no observed asbestos.	dry to damp	0.2	T_5_ESMW04_3.0	Backfill	
		3.0	1.0				**SILTSTONE** - light grey, fine grained, fresh, high strength, no observed asbestos.	dry				
		3.40					**SILTSTONE** - light brown and light grey, fine grained, no observed asbestos.					
		4.0	0.0									
		5.0	-1.0									
		6.0	-2.0								Bentonite	
		6.80			CL		**CLAY** - dark brown, slightly plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry to moist			Gravel Pack	
		6.90	-3.0				**SILTSTONE** - light brown and light grey, fine grained, no observed asbestos.	dry				
		8.0	-4.0								Screen	
		9.0	-5.0									
		10.00	-6.0				**End of Hole at 10.00 m**					
		11.0										

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/02/2016**

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_5_ESMW5**
Project Number:	**15107**
Hole Depth:	**15.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**17/11/2015**
Location / Site:	**Tomago**	Ground Level :	**10.71**
Client:	**AGL Macquarie**	Top of Casing :	**11.386**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**379111.8**
		Northing:	**6368647.1**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
HA		0.05				Fill	**ASPHALT**.	dry	0.0	T_5_ESMW05_0.1		Gatic
		0.30			ML		**FILL** - Gravelly SAND, dark reddish brown, very loose, fine to medium, non uniform, no odour, no staining, no observed asbestos.	dry	0.0	T_5_ESMW05_0.5		
		0.60	10.0		CL			dry to damp	0.0	T_5_ESMW05_1.0		
		0.80			CL							
		1.10										
Solid Flight Auger		2.0	9.0		CL		**Clayey SILT** - brown, non plastic, medium stiff to very soft, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_5_ESMW05_2.0		
		2.50	8.0				**Silty CLAY** - dark brown, non plastic, soft, uniform, no odour, no staining, no observed asbestos.	damp				
		3.0						dry				
		4.0	7.0				**Silty CLAY** - light brown with light grey, non plastic, soft, non uniform, mottled, no odour, no staining, no observed asbestos.					Backfill
		4.50	6.0									
		5.0			CL		**Silty CLAY** - light brownish grey with dark, moderately plastic, stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp				
		5.80	5.0				**SILTSTONE** - light grey, fine grained, high strength, no observed asbestos.	moist				
		6.0										
		7.0	4.0		CL		**CLAY** - dark orangish brown, non plastic, hard to very hard, uniform, no odour, no staining.					
		7.50	3.0				**CLAY** - dark orangish brown, non plastic, hard to very hard, uniform, no odour, no staining.	dry				
		8.0					**SILTSTONE** - light grey, fine grained, high strength, no observed asbestos.					Bentonite
		8.50										
		8.00										
		9.0	2.0									
		10.0	1.0									Gravel Pack
		11.0	0.0									
		12.0	-1.0									
		13.0	-2.0									Screen
		14.0	-3.0									
		15.00	-4.0									
			-5.0				**End of Hole at 15.00 m**					
		16.0										

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **9/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **9/02/2016**

REUMAD

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_5_ESMW6**
Project Number:	**15107**
Hole Depth:	**10.50 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**7.72**
Client:	**AGL Macquarie**	Top of Casing :	**8.972**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**379085.2**
		Northing:	**6368351.8**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
HA		0.30			CL	Natural	**CLAY** - dark brown, slightly plastic, soft, non uniform, trace fine sand, no odour, no staining, no observed asbestos.	damp to moist	0.0	T_5_ESMW06_0.1		Gatic
		0.60	7.0		CL				0.1	T_5_ESMW06_0.5		
Solid Flight Auger		1.0			CL		**CLAY** - dark brown and light brown, moderately plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry to moist	0.1	T_5_ESMW06_1.0		
		1.20						damp	0.1	T_5_ESMW06_1.4		
			6.0				**Silty CLAY** - light grey with dark reddish, moderately plastic, stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp				
		2.0										
		2.20					**SILTSTONE** - light grey, fine grained, fresh, high strength, no observed asbestos.	dry				
		2.80	5.0									
		3.0			CL		**SILTSTONE** - light grey and light brown, very fine grained, high strength, no observed asbestos.	damp				Backfill
		3.20										
			4.0				**CLAY** - dark brown, moderately plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry				
		4.0					**SILTSTONE** - light grey and light brown, very fine grained, high strength, no observed asbestos.					
			3.0									
		5.0										
			2.0									
		6.0										Bentonite
			1.0									Gravel Pack
		7.00										
			0.0				**CLAY** - dark brown, slightly plastic, uniform, no odour, no staining, no observed asbestos.	moist to wet				
		8.0										
			-1.0		CL							
		9.0										
			-2.0									
		10.0										
		10.50										
			-3.0				**End of Hole at 10.50 m**					
		11.0										

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_5_ESSB3**
Project Number:	**15107**
Hole Depth:	**2.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
Solid Flight Auger		0.2, 0.4, 0.60				Fill	**FILL** - Silty CLAY, light brownish and, slightly plastic, soft, non uniform, little coarse gravel, little coarse sand, trace rock fragments, no odour, no staining, no observed asbestos.	dry to damp	0.4	T_5_ESSB03_0.1
									0.3	T_5_ESSB03_0.5
		0.8, 1.0, 1.2, 1.4, 1.50			CL	Natural	**Silty CLAY** - light greyish brown, slightly plastic, medium stiff, non uniform, little fine to medium sand, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.3	T_5_ESSB03_1.0
		1.6, 1.70			CL		**Silty CLAY** - dark grey dark reddish brown, slightly plastic, stiff to very stiff, uniform, trace silty clay, no odour, no staining, no observed asbestos.	dry to damp		
		1.8, 2.00					**SILTSTONE** - light grey, fine grained, fresh, high strength, no observed asbestos.	dry		
		2.2, 2.4, 2.6, 2.8, 3.0					**End of Hole at 2.00 m**		0.2	T_5_ESSB03_2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD	Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
	Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:38 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_5_ESSB4**
Project Number:	**15107**
Hole Depth:	**2.70 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
Solid Flight Auger		0.15				Fill	**FILL** - Silty CLAY, light brown, slightly plastic, soft, non uniform, little coarse gravel, little coarse sand, trace rock fragments, no odour, no staining, no observed asbestos.	dry to damp	0.3	T_5_ESSB04_0.1
		0.2			CH	Natural	**Silty CLAY** - dark grey and light brown, highly plastic, medium stiff, uniform, little silty clay, mottled, no odour, no staining, no observed asbestos.	moist		
		0.4								
		0.50							0.3	T_5_ESSB04_0.5
		0.6			GP		**Gravel** - light grey, coarse, non uniform, no odour, no staining, no observed asbestos.	dry		
		0.80								
							SILTSTONE - light grey light orangish brown, fine grained, fresh, high strength, no observed asbestos.	dry		
		1.0							0.7	T_5_ESSB04_1.0
		1.10								
		1.2			CL		**Silty CLAY** - dark orangish brown and light orangish brown, non plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp		
		1.4								
		1.6								
		1.8								
		2.0							0.0	T_5_ESSB04_2.0
		2.2								
		2.4								
		2.6								
		2.70							0.3	T_5_ESSB04_2.7
		2.8					**End of Hole at 2.70 m**			
		3.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:39 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_6_SD01**
Project Number:	**15107**
Hole Depth:	**0.29 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**16/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.2				Fill	**FILL** - CLAY, grey, moderate, very soft to soft, see description odour, no staining, anaerobic odour, some organics and trace very angular gravels.	very wet	1.2	T_6_SD01_0.15
		0.4					**End of Hole at 0.29 m**			
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **16/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **16/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:40 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_6_SP02A**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - Clayey SAND, dark brown, medium dense to dense, fine to medium, subangular, organic odour, no staining, some orange specks throughout, organics present.	dry	0.3	T_6_SP02A_0.2
		0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0					**End of Hole at 0.20 m**			

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:41 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_6_SP02B**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - SAND, dark greyish brown, very loose to loose, fine to medium, subangular, and cobbles, organic odour, no staining, some soft high plasticity clays, no observed ACM, some greens, olives and oranges in clays.	slightly moist	0.3	T_6_SP02B_0.2
		0.4					**End of Hole at 0.20 m**			
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_7_SP03A**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - SAND, tannish brown, very loose to loose, fine, subangular, some cobbles, organic odour, no staining, organics present with some hard plastics, cobbles subrounded to very angular..	slightly moist	0.5	T_7_SP03A_0.2
							End of Hole at 0.20 m			

0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_7_SP03B**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - Gravelly SAND, dark brown, loose to medium dense, fine to medium, subangular, organic odour, no staining, ant colony, coal fragments, organic matter, hard plastic fragments.	slightly moist	0.6	T_7_SP03B_0.2
							End of Hole at 0.20 m			

Depth (mbgl): 0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD	Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
	Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:56:43 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_7_SP03C**
Project Number:	**15107**
Hole Depth:	**0.20 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**10/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.20				Fill	**FILL** - SAND, dark greyish black, very loose to loose, fine to medium, subangular, trace organics, no odour, no staining.	slightly moist	0.2	T_7_SP03C_0.2
		0.4, 0.6, 0.8, 1.0, 1.2, 1.4, 1.6, 1.8, 2.0					**End of Hole at 0.20 m**			

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

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Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESMW7**
Project Number:	**15107**
Hole Depth:	**6.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**16/11/2015**
Location / Site:	**Tomago**	Ground Level :	**4.45**
Client:	**AGL Macquarie**	Top of Casing :	**5.044**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378699.8**
		Northing:	**6368432.0**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
HA		0.30	4.0			Natural	**Clayey Peat** - dark brown, spongy, uniform, low plasticity, organic odour, no staining, no observed asbestos.	dry to moist	0.0	T_ESMW07_0.1		Gatic
		0.80					**Clayey Peat** - dark greenish brown, plastic, uniform, medium plasticity, organic odour, no staining, no observed asbestos.	damp	0.0	T_ESMW07_0.5		
		0.90	3.5		CH		**CLAY** - dark brownish black with light brownish grey, highly plastic, stiff to very stiff, uniform, mottled, no odour, no staining, no observed asbestos.	damp to moist	0.0	T_ESMW07_1.0		
Solid Flight Auger		1.80	3.0		CL		**Silty CLAY** - light grey, non plastic, medium stiff, uniform, homogeneous, no odour, no staining, no observed asbestos.	dry to damp				Backfill
		2.50	2.5		CL		**Silty CLAY** - light brownish grey, soft, non uniform, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW07_2.0		
		4.20	1.5		CL		**Silty CLAY** - light grey, soft, non uniform, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW07_3.0		Bentonite, Gravel Pack
		4.90	0.0		CL		**Silty CLAY** - light orangish brown, soft, non uniform, no odour, no staining, no observed asbestos.	damp				Screen
		6.00	-0.5		CL		**Silty CLAY** - light yellowish brown, non plastic, soft, non uniform, no odour, no staining, no observed asbestos.	wet to saturated				
			-1.5				**End of Hole at 6.00 m**					

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:45 PM

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESMW8**
Project Number:	**15107**
Hole Depth:	**5.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**16/11/2015**
Location / Site:	**Tomago**	Ground Level :	**4.78**
Client:	**AGL Macquarie**	Top of Casing :	**5.356**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378500.7**
		Northing:	**6368577.8**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
HA		0.5, 0.70	4.5			Natural	**Clayey SILT** - dark brown, soft, uniform, low plasticity, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW08_0.1		Gatic
									0.0	T_ESMW08_0.5		
Solid Flight Auger		1.0, 1.50	4.0, 3.5		CL		**CLAY** - dark olive red with dark grey, moderately plastic, uniform, mottled, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW08_1.0		Backfill
		2.0, 2.40	3.0, 2.5		CL		**CLAY** - light brown with dark grey, moderately plastic, medium stiff, uniform, mottled, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW08_2.0	1.50, 1.80	Bentonite
		2.5, 2.90	2.0		CL		**Silty CLAY** - light grey, soft, non uniform, no odour, no staining, no observed asbestos.	damp				Gravel Pack
		3.0, 3.5, 4.0, 4.10	1.5, 1.0		CL		**Silty CLAY** - light orangish brown, soft, non uniform, no odour, no staining, no observed asbestos.	damp	0.0	T_ESMW08_3.0		Screen
		4.5, 5.00	0.5, 0.0		CL		**Silty CLAY** - light yellowish brown, non plastic, soft to very soft, uniform, no odour, iron oxide staining, no observed asbestos.	wet to saturated				
		5.5, 6.0	-0.5, -1.0				**End of Hole at 5.00 m**					

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:47 PM

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESMW9**
Project Number:	**15107**
Hole Depth:	**6.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**16/11/2015**
Location / Site:	**Tomago**	Ground Level :	**9.85**
Client:	**AGL Macquarie**	Top of Casing :	**10.435**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378879.2**
		Northing:	**6368496.7**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
HA		0.10				Natural	**CLAY** - dark brown, slightly plastic, soft, uniform, low plasticity, no odour, no staining, no observed asbestos.	damp to moist	0.0	T_ESMW09_0.1		Gatic
		0.5	9.5		CL		**CLAY** - dark brown with light grey, moderately plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.2	T_ESMW09_0.5		
		0.70										
		1.0	9.0		CH		**CLAY** - dark brown with dark reddish, highly plastic, medium stiff to stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_ESMW09_1.0		
		1.20										
Solid Flight Auger		1.5	8.5		CL		**Silty CLAY** - light orangish brown and light grey, non plastic, soft, non uniform, little silty clay, no odour, no staining, no observed asbestos.	dry to damp				Backfill
		1.80	8.0									
		2.0			CL		**Silty CLAY** - dark orangish brown and light grey, non plastic, soft, non uniform, little silty clay, no odour, no staining, no observed asbestos.	dry to damp	0.0	T_ESMW09_2.0		
		2.5	7.5									
		3.0	7.0									
		3.10										
		3.5	6.5		CL		**Silty CLAY** - dark brownish grey, non plastic, medium stiff, uniform, no odour, no staining, no observed asbestos, crumbly.	dry				
		4.0	6.0									
		4.50	5.5									
		4.80			CL		**Silty CLAY** - dark brownish grey with dark grey, non plastic, medium stiff, uniform, no odour, no staining, no observed asbestos, crumbly.	damp				Screen
		5.0	5.0					moist to wet				
		5.5	4.5		CH		**CLAY** - dark blackish brown, highly plastic, stiff to very stiff, uniform, high plasticity, no odour, no staining, no observed asbestos.					
		6.00	4.0									
		6.5	3.5				**End of Hole at 6.00 m**					
		7.0	3.0									

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:49 PM

Groundwater Well Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESMW10**
Project Number:	**15107**
Hole Depth:	**13.50 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**14.81**
Client:	**AGL Macquarie**	Top of Casing :	**15.353**
Drill Method:	**Hand Auger, Solid Flight Auger**	Easting:	**378930.9**
		Northing:	**6368721.9**
		Zone:	**56H**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.	Well Details	Well Construction
Hand Auger		0.40			CL	Natural	**Silty Lean CLAY** - dark brown, slightly plastic, soft to very soft, uniform, no odour, no staining, no observed asbestos.	damp to moist	0.4	T_ESMW10_0.1		Gatic
		0.60			CL				0.6	T_ESMW10_0.5		
		1.0	14.0		CL		**Silty CLAY** - light brown and dark grey, slightly plastic, medium stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.5	T_ESMW10_1.0		
		1.50						dry				
		2.0	13.0		CL		**Silty CLAY** - dark tannish grey, medium stiff, non uniform, trace fine gravel, little coarse sand, no odour, no staining, no observed asbestos.	dry to moist	0.2	T_ESMW10_2.0		
		2.80	12.0									
		3.0			CL		**Silty CLAY** - pale grey, non plastic, hard, uniform, no odour, no staining.	dry to damp				
		3.90	11.0				**Silty CLAY** - dark reddish brown and dark grey, non plastic, medium stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry				
		4.20			CL							
		5.0	10.0		CL		**CLAY** - brown with dark grey, non plastic, medium stiff, uniform, no odour, no staining.	dry to damp				Backfill
		5.40										
Solid Flight Auger		5.90	9.0		CL		**Silty CLAY** - dark olive brown, non plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry				
		6.50			CL		**Silty CLAY** - light grey, non plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry				
		7.0	8.0				**Silty CLAY** - light brown, non plastic, stiff, uniform, no odour, no staining, no observed asbestos.	dry				
		8.0	7.0				**SILTSTONE** - light grey, high strength, no observed asbestos.					
		9.0	6.0									Bentonite
		10.0	5.0									Gravel Pack
		11.0	4.0									Screen
		11.80	3.0									
		12.0			CL		**CLAY** - dark grey, slightly plastic, no odour, no staining, no observed asbestos.	damp				
		13.0	2.0									
		13.50										
		14.0	1.0				**End of Hole at 13.50 m**					

Additional Comments

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **9/12/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **9/02/2016**

REUMAD

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESSB5**
Project Number:	**15107**
Hole Depth:	**3.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**11/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm
Solid Flight Auger		0.05				Natural	**TOPSOIL**.		
		0.40			CL		**Silty CLAY** - dark brown, non plastic, very soft, non uniform, little fine to medium gravel, no odour, no staining, no observed asbestos.	dry to damp	0.0
		0.5			CL		**Silty CLAY** - dark brown, slightly plastic, medium stiff, non uniform, trace fine to medium gravel, no odour, no staining, no observed asbestos.	dry to damp	0.0
		0.80			CL		**Silty CLAY** - dark olive red and light tannish brown, moderately plastic, stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.0
		1.0			CL		**Silty CLAY** - dark olive red and light grey, moderately plastic, stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.0
		1.50							
		2.0							0.0
		2.5							
		3.00							
		3.5					**End of Hole at 3.00 m**		0.0
		4.0							

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001_REUMAD.GDT 11/2/16 3:56:52 PM

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_ESSB6**
Project Number:	**15107**
Hole Depth:	**3.00 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**16/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Solid Flight Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm
Solid Flight Auger		0.20				Natural	**CLAY** - dark brown, slightly plastic, soft, uniform, low plasticity, no odour, no staining, no observed asbestos.	damp to moist	0.0
		0.5 / 0.70			CL		**CLAY** - dark brown with light grey, moderately plastic, medium stiff, uniform, no odour, no staining, no observed asbestos.	dry to damp	0.0
		1.0 / 1.20			CL		**CLAY** - light reddish with light grey, highly plastic, very stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.0
		1.5 / 2.0 / 2.5 / 2.70			CL		**CLAY** - light reddish with light grey, moderately plastic, stiff, uniform, mottled, no odour, no staining, no observed asbestos.	dry to damp	0.0
		3.00			CL		**Silty CLAY** - light orangish brown, non plastic, soft, uniform, no odour, no staining, no observed asbestos.	dry	
		3.5 / 4.0					**End of Hole at 3.00 m**		0.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Jack O'Shaughnessy**	Date: **10/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **10/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SB7**
Project Number:	**15107**
Hole Depth:	**1.50 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
Hand Auger	▽	0.2			CL	Natural	**Silty CLAY** - very dark brown, moderate, soft to stiff, organic odour, no staining, no observed ACM, organics present, water at 0.25.	moist	1.1	T_SB07_0.1
		0.30								
		0.4			CH		**Sandy CLAY** - dark grey, high, stiff, medium grained, no odour, no staining, no observed ACM.	very wet		
		0.6							1.7	T_SB07_0.5
		0.8								
		1.0							0.1	T_SB07_1.0
		1.2								
		1.4								
		1.50							1.1	T_SB07_1.5_150
		1.6					**End of Hole at 1.50 m**			
		1.8								
		2.0								
		2.2								
		2.4								
		2.6								
		2.8								
		3.0								

Additional Comments

▽ Strike Groundwater Level ▼ Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SB8**
Project Number:	**15107**
Hole Depth:	**1.90 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	Sample ID
HA		0.20			ML	Natural	**SILT** - dark brown, low, very soft, organic odour, no staining, no ACM observed, organic matter.	saturated	T_ESSB08
		0.4			CL		**Silty CLAY** - dark grey, moderate, stiff, no odour, no staining, no observed ACM.	saturated	
		0.60			CH		**CLAY** - dark grey, high, no odour, no staining, very stiff, no observed ACM.	saturated	
		0.8							
		1.0							
		1.2							
		1.4							
		1.6							
		1.8							
		1.90							
		2.0					**End of Hole at 1.90 m** Refusal		
		2.2							
		2.4							
		2.6							
		2.8							
		3.0							

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SB9**
Project Number:	**15107**
Hole Depth:	**1.90 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID	Sample ID
HA		0.20			ML	Natural	**SILT** - dark brown, low, very soft, organic odour, no staining, no ACM observed, organic matter.	saturated		T_ESSB09
		0.4			CL		**Silty CLAY** - dark grey, moderate, stiff, no odour, no staining, no observed ACM.	saturated	0.1	
		0.60			CH		**CLAY** - dark grey, high, no odour, no staining, very stiff, no observed ACM.	saturated		
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		1.90								
		2.0					**End of Hole at 1.90 m** Refusal			
		2.2								
		2.4								
		2.6								
		2.8								
		3.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SB10**
Project Number:	**15107**
Hole Depth:	**1.70 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**19/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID	Sample ID
HA		0.2 0.40			CL	Natural	**Sandy CLAY** - dark brown, non plastic, soft to stiff, coarse grained, organic odour, no staining, no observed ACM, organics present.	moist slightly	0.0	T_ES SB10
		0.6 0.8 1.0 1.10			CL		**Sandy CLAY** - light brown, non plastic, soft to stiff, coarse grained, no odour, no staining, no observed ACM.	moist slightly		
		1.2 1.4 1.6 1.70			CL		**Sandy CLAY** - light grey, non plastic, stiff, coarse grained, no odour, no staining.	moist slightly		
		1.8 2.0 2.2 2.4 2.6 2.8 3.0					**End of Hole at 1.70 m**			

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **19/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **19/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG1**
Project Number:	**15107**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - SAND, dark brown, medium dense, fine, subangular, organic odour, no staining, no ACM visible, grass all around sampled area which was bare, organics present.	slightly moist	0.0	T_SG01_0.1
							End of Hole at 0.10 m			
		0.2								
		0.4								
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG2**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Clayey SAND, dark brown, medium dense to dense, fine, subangular, organic odour, no staining, no ACM observed, sampled adjacent to track with grass scarce or bare.	very moist	0.5	T_SG02_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
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Hole ID.	**T_SG3**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Sandy CLAY, dark brown, moderate, very soft to soft, fine grained sand, no odour, no staining, no ACM observed in healthy long grass, potentially reworked natural.	moist	0.1	T_SG03_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG4**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Clayey SAND, dark brown, medium dense, fine, subangular, organic odour, no staining, potentially reworked natural, no observed ACM, sampled among long healthy grass.	very moist	1.1	T_SG04_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG5**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Sandy CLAY, brown, low, very soft to soft, fine grained sand, organic odour, no staining, Potentially reworked natural, no observed ACM, sampled among long healthy grass adjacent to track.	very moist	0.6	T_SG05_0.1
		0.2					**End of Hole at 0.10 m**			
		0.4								
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG6**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Clayey SAND, dark brown, medium dense to dense, fine to medium, subangular, organic odour, no staining, potentially reworked natural, no observed ACM, organics present, sampled among dense healthy grasses.	wet	1.2	T_SG06_0.1
		0.2					**End of Hole at 0.10 m**			
		0.4								
		0.6								
		0.8								
		1.0								
		1.2								
		1.4								
		1.6								
		1.8								
		2.0								

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG7**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**18/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		0.10				Fill	**FILL** - Clayey SAND, brown, medium dense to dense, subangular, organic odour, no staining, mottled with orange, tan, light and dark browns, potentially reworked natural, no observed ACM, organics present, sour organic odour, sampled under stand of pines where grass is not as healthy as surrounds.	dry	1.4	T_SG07_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **18/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **18/01/2016**

Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG8**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**19/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - Sandy CLAY, dark brown, low, stiff, fine grained sand, organic odour, no staining, no observed ACM.	dry	0.9	T_SG08_0.1_154
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **19/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **19/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG9**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**19/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - SAND, dark whitish brown, loose, medium to coarse, subangular, organic odour, no staining, no ACM observed, sampled nearby stockpiles,organics present.	slightly moist	0.2	T_SG09_0.1
							End of Hole at 0.10 m			

0.2 0.4 0.6 0.8 1.0 1.2 1.4 1.6 1.8 2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

REUMAD

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **19/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **19/01/2016**

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Borehole Log

EnvironmentalStrategies
PROVIDING BENEFITS

Hole ID.	**T_SG10**
Project Number:	**15092**
Hole Depth:	**0.10 m**
Sheet:	**1 of 1**

Project Name:	**Environmental Site Assessment**	Date:	**19/11/2015**
Location / Site:	**Tomago**	Ground Level :	**N/A**
Client:	**AGL Macquarie**	Top of Casing :	**N/A**
Drill Method:	**Hand Auger**	Easting:	**N/A**
		Northing:	**N/A**
		Zone:	**N/A**

Method	Water Level	Depth (mbgl)	RL (mAHD)	Graphic Log	USCS Symbol	Material Type	Material Description	Moisture	PID ppm	Sample ID No.
HA		*0.10*				Fill	**FILL** - SAND, dark whitish brown, loose to medium dense, medium to coarse, subangular, organic odour, no staining, no observed ACM, organics present.	slightly moist	0.4	T_SG10_0.1
							End of Hole at 0.10 m			

0.2
0.4
0.6
0.8
1.0
1.2
1.4
1.6
1.8
2.0

Additional Comments

Strike Groundwater Level Static Groundwater Level

Log Drawn By: L D White (tweaked from pLog supplied)	Logged By: **Greg Sheehan**	Date: **19/11/2015**
Contact: laurie.white@reumad.com.au	Checked By: **Checked by CW**	Date: **19/01/2016**

ES LOG ENV AGL AGL MACQUARIE 15092 ALL LOGS.GPJ 20151001 REUMAD.GDT 11/2/16 3:57:05 PM

APPENDIX F – Field Measurement Tables

Summary of Field Parameters for Surface Water and Groundwater

							Inorganics		Field	
				SWL	Temperature	PURGE VOLUME	Redox	Dissolved Oxygen	Conductivity (Field)	pH (Field)
				mBToC	°C	L	mV	mg/L	uS/cm	pH_Units
EQL										
Site_ID	**Location_Code**	**Field_ID**	**Sampled_Date_Time**							
15092_Liddell	T_1_ESMW01	T_1_ESMW01_1_6_10 Dec 15	10/12/2015	6.421	20.3	6	124.7	3.9	293	5.22
15092_Liddell	T_5_ESMW04	T_5_ESMW04_1_8_10 Dec 15	10/12/2015	3.088	19.9	8	85.6	1.23	7763	4.76
15092_Liddell	T_5_ESMW05	T_5_ESMW05_1_4_09 Dec 15	9/12/2015	5.678	19.9	4	121	1.54	8335	4.29
15092_Liddell	T_5_ESMW06	T_5_ESMW06_1_5_09 Dec 15	9/12/2015	3.047	18.4	5	282.6	2.18	12,513	4.12
15092_Liddell	T_6_SD01	T_6_SD01_1_16 Nov 15	16/11/2015	-	25.1	-	115.1	5.48	129.9	7.82
15092_Liddell	T_6_SW01	T_6_SW01_1_16 Nov 15	16/11/2015	-	30.5	-	136.7	5.57	134	7.87
15092_Liddell	T_ESMW07	T_ESMW07_1_3_10 Dec 15	10/12/2015	1.455	17.7	3	414.2	0.39	9046	3.87
15092_Liddell	T_ESMW08	T_ESMW08_1_6_10 Dec 15	10/12/2015	1.345	17.4	6	235.9	0.36	1701	4.35
15092_Liddell	T_ESMW09	T_ESMW09_1_4_10 Dec 15	10/12/2015	2.222	17.7	4	254.9	1.37	7186	4.13
15092_Liddell	T_ESMW10	T_ESMW10_1_5_09 Dec 15	9/12/2015	9.484	18.7	6	249	5.97	16,768	3.87
15092_Liddell	T_SW02	T_SW02_1_17 Nov 15	17/11/2015	-	17.7	-	-14	1.92	480	7.23

Statistical Summary

Number of Results	11	11	9	11	11	11	11
Number of Detects	11	11	9	11	11	11	11
Minimum Concentration	1.345	17.4	3	-14	0.36	129.9	3.87
Minimum Detect	1.345	17.4	3	ND	0.36	129.9	3.87
Maximum Concentration	9.484	30.5	8	414.2	5.97	16768	7.87
Maximum Detect	9.484	30.5	8	414.2	5.97	16768	7.87
Average Concentration	4.100	20	5.3	182	2.7	5850	5.2
Median Concentration	3.068	18.7	5.5	136.7	1.92	7186	4.35
Standard Deviation	2.9	4	1.6	117	2.1	5725	1.6
Number of Guideline Exceedances	0	0	0	0	0	0	0
Number of Guideline Exceedances(Detects Only)	0	0	0	0	0	0	0

APPENDIX G – Field Records

WATER FIELD RECORD SHEET

Environmental Strategies
PROVIDING BENEFITS

PROJECT : AGLM
JOB No: 15107
LOCATION : Tomago
DATE : 16.11.15 + 17.11.15
TIME:
OPERATOR : GS

SAMPLE	TIME	FLOW CONDITIONS	pH	EC	DO	Redox	Temp	Turbidity	DTW	COMMENTS
T_6_SD01	16.11.15	Dam	7.82	129.9	5.48	115.1	25.1	–	–	Swampy/muddy odour. Brown turbid with suspended solids. No sheen
T_6_SW01	16.11.15	Dam	7.87	134.0	5.57	136.7	30.5	–	–	As above.
T_SW02	17.11.15	Swamp /	7.23	480.0	1.92	-14.0	17.7	–	–	Clear with much dark suspended solids giving black/brown appearance. Organics present. Swampy/anaerobic odour. No sheen visible.
		still ?								

Notes:

APPENDIX H – Field QA/QC

Rinsate, FB and TB Results

Field Blanks (water)
Filter: SDG in('SE147182','SE147182

SDG		SE147182-1	SE147182-1	SE146247-1	SE147182-1	SE147182-1
Field ID		FBGS101215	RINGS101215	Trip Blank	TBGS101215	TRIP BLANK
Sampled_Date/Time		10/12/2015	10/12/2015	16/11/2015	10/12/2015	14/12/2015
Sample Type		Field_B	Rinsate	Trip_B	Trip_B	Trip_B
ChemName	**Units**	**EQL**				
Biological						
Faecal Coliforms	CFU/100mL					
BTEX						
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene (m & p)	µg/L	1	<1	<1	<1	<1	<1
Xylene (o)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Xylene Total	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	
Total BTEX	µg/L	3	<3	<3	<3	<3	
Chlorinated Hydrocarbons							
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5		<0.5	
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5		<0.5	
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5		<0.5	
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5		<0.5	
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5		<0.5	
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5		<0.5	
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5		<0.5	
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5		<0.5	
Bromochloromethane	µg/L	0.5	<0.5	<0.5		<0.5	
Bromodichloromethane	µg/L	0.5	<0.5	<0.5		<0.5	
Bromoform	µg/L	0.5	<0.5	<0.5		<0.5	
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5		<0.5	
Chlorodibromomethane	µg/L	0.5	<0.5	<0.5		<0.5	
Chloroethane	µg/L	5	<5	<5		<5	
Chloroform	µg/L	0.5	**3**	**2.5**		**3.2**	
Chloromethane	µg/L	5	<5	<5		<5	
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5		<0.5	
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5		<0.5	
Dibromomethane	µg/L	0.5	<0.5	<0.5		<0.5	
Dichloromethane	µg/L	4	<4	<4		<4	
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5		<0.5	
Trichloroethene	µg/L	0.5	<0.5	<0.5		<0.5	
Tetrachloroethene	µg/L	0.5	<0.5	<0.5		<0.5	
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5		<0.5	
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5		<0.5	
Vinyl chloride	µg/L	0.3	<0.3	<0.3		<0.3	
EW_EPA8100_LL							
Total PAH (18)	µg/L	0.1					
Halogenated Benzenes							
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3		<0.3	
2-chlorotoluene	µg/L	0.5	<0.5	<0.5		<0.5	
4-chlorotoluene	µg/L	0.5	<0.5	<0.5		<0.5	
Bromobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
Chlorobenzene	µg/L	0.5	<0.5	<0.5		<0.5	
Halogenated Hydrocarbons							
1,2-dibromoethane	µg/L	0.5	<0.5	<0.5		<0.5	
Bromomethane	µg/L	10	<10	<10		<10	
Dichlorodifluoromethane	µg/L	5	<5	<5		<5	
Iodomethane	µg/L	5	<5	<5		<5	
Trichlorofluoromethane	µg/L	1	<1	<1		<1	
MAH							
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
Isopropylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
n-butylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
n-propylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5		<0.5	
sec-butylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
Styrene	µg/L	0.5	<0.5	<0.5		<0.5	
tert-butylbenzene	µg/L	0.5	<0.5	<0.5		<0.5	
Metals							
Arsenic	µg/L	1	<1				
Arsenic (Filtered)	µg/L	1	<1				
Boron	µg/L	5					
Boron (Filtered)	µg/L	5					
Cadmium	µg/L	0.1	<0.1				
Cadmium (Filtered)	µg/L	0.1	<0.1				
Chromium (III+VI)	µg/L	1	<1				
Chromium (III+VI) (Filtered)	µg/L	1	<1				
Copper	µg/L	1	<1				
Copper (Filtered)	µg/L	1	<1				
Lead	µg/L	1	<1				
Lead (Filtered)	µg/L	1	<1				
Mercury	µg/l	0.05	<0.05				
Mercury (Filtered)	µg/l	0.05	<0.05				
Nickel	µg/L	1	<1				
Nickel (Filtered)	µg/L	1	<1				
Selenium	µg/L	1					
Selenium (Filtered)	µg/L	1					
Zinc	µg/L	5	<5				
Zinc (Filtered)	µg/L	5	<5				
NA							
Total Coliform Count	cfu/100 ml						
PAH							
Benzo(b+j)fluoranthene	mg/l	0.00001					
PAH/Phenols							
1-Methylnaphthalene	µg/L	0.01	<0.01	<0.01			
2-methylnaphthalene	µg/L	0.01	<0.01	<0.01			
Acenaphthene	µg/L	0.01	<0.01	<0.01			
Acenaphthylene	µg/L	0.01	<0.01	<0.01			
Anthracene	µg/L	0.01	<0.01	<0.01			
Benz(a)anthracene	µg/L	0.01	<0.01	<0.01			

Rinsate, FB and TB Results

Field Blanks (water)
Filter: SDG in('SE147182','SE147182

		SDG	SE147182-1	SE147182-1	SE146247-1	SE147182-1	SE147182-1
		Field ID	FBGS101215	RINGS101215	Trip Blank	TBGS101215	TRIP BLANK
		Sampled_Date/Time	10/12/2015	10/12/2015	16/11/2015	10/12/2015	14/12/2015
		Sample Type	Field_B	Rinsate	Trip_B	Trip_B	Trip_B
Benzo(a) pyrene	µg/L	0.005	<0.01	<0.01			
Benzo(b+k)fluoranthene	µg/L	0.02	<0.02	<0.02			
Benzo(g,h,i)perylene	µg/L	0.01	<0.01	<0.01			
Benzo(k)fluoranthene	µg/L	0.01					
Chrysene	µg/L	0.01	<0.01	<0.01			
Dibenz(a,h)anthracene	µg/L	0.01	<0.01	<0.01			
Fluoranthene	µg/L	0.01	<0.01	<0.01			
Fluorene	µg/L	0.01	<0.01	<0.01			
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	<0.01	<0.01			
Naphthalene	µg/L	0.02	<0.5	<0.5	<0.5	<0.5	<0.5
PAHs (Sum of total)	µg/L	0.1	<0.1	<0.1			
Phenanthrene	µg/L	0.01	<0.01	<0.01			
Pyrene	µg/L	0.01	<0.01	<0.01			
Solvents							
Methyl Ethyl Ketone	µg/L	10	<10	<10		<10	
2-hexanone (MBK)	µg/L	5	<5	<5		<5	
4-Methyl-2-pentanone	µg/L	5	<5	<5		<5	
Acetone	mg/l	0.01	<0.01	<0.01		<0.01	
Acrylonitrile	µg/L	0.5	<0.5	<0.5		<0.5	
Allyl chloride	mg/l	0.002	<0.002	<0.002		<0.002	
Carbon disulfide	µg/L	2	<2	<2		<2	
MTBE	mg/l	0.002	<0.002	<0.002		<0.002	
Vinyl acetate	µg/L	10	<10	<10		<10	
TPH							
TRH C37-C40	µg/L	200	<200	<200			
C6 - C9	µg/L	40	<40	<40		<40	<40
C10 - C14	µg/L	50	<50	<50			
C15 - C28	µg/L	200	<200	<200			
C29-C36	µg/L	200	<200	<200			
+C10 - C36 (Sum of total)	µg/L	450	<450	<450			
C10 - C40 (Sum of total)	µg/L	650	<650	<650			
TRH							
C6-C10	µg/L	50	<50	<50		<50	<50
C6-C10 less BTEX (F1)	µg/L	50	<50	<50		<50	<50
C10-C16	µg/L	60	<60	<60			
C16-C34	µg/L	500	<500	<500			
C34-C40	µg/L	500	<500	<500			
VOCs							
2-Nitropropane	µg/L	100	<100	<100		<100	
cis-1,4-Dichloro-2-butene	µg/L	1	<1	<1		<1	
trans-1,4-Dichloro-2-butene	µg/L	1	<1	<1		<1	

Soil Blank Results

Field Blanks (soil)
Filter: SDG in('SE147182','SE147182-1','SE146247

SDG	SE145989-1	SE146247-1
Field ID	Tripblank	Trip Blank
Sampled_Date/Time	10/11/2015	16/11/2015
Sample Type	Trip_B	Trip_B

ChemName	Units	EQL		
Asbestos				
Asbestos fibres	-	0		
BTEX				
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
Xylene (m & p)	mg/kg	0.2	<0.2	<0.2
Xylene (o)	mg/kg	0.1	<0.1	<0.1
Xylene Total	mg/kg	0.3	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6
Chlorinated Hydrocarbons				
1,1,1,2-tetrachloroethane	mg/kg	0.1		
1,1,1-trichloroethane	mg/kg	0.1		
1,1,2,2-tetrachloroethane	mg/kg	0.1		
1,1,2-trichloroethane	mg/kg	0.1		
1,1-dichloroethane	mg/kg	0.1		
1,1-dichloroethene	mg/kg	0.1		
1,1-dichloropropene	mg/kg	0.1		
1,2,3-trichloropropane	mg/kg	0.1		
1,2-dibromo-3-chloropropane	mg/kg	0.1		
1,2-dichloroethane	mg/kg	0.1		
1,2-dichloropropane	mg/kg	0.1		
1,3-dichloropropane	mg/kg	0.1		
2,2-dichloropropane	mg/kg	0.1		
Bromochloromethane	mg/kg	0.1		
Bromodichloromethane	mg/kg	0.1		
Bromoform	mg/kg	0.1		
Carbon tetrachloride	mg/kg	0.1		
Chlorodibromomethane	mg/kg	0.1		
Chloroethane	mg/kg	1		
Chloroform	mg/kg	0.1		
Chloromethane	mg/kg	1		
cis-1,2-dichloroethene	mg/kg	0.1		
cis-1,3-dichloropropene	mg/kg	0.1		
Dibromomethane	mg/kg	0.1		
Dichloromethane	mg/kg	0.5		
Hexachlorobutadiene	mg/kg	0.1		
Trichloroethene	mg/kg	0.1		
Tetrachloroethene	mg/kg	0.1		
trans-1,2-dichloroethene	mg/kg	0.1		
trans-1,3-dichloropropene	mg/kg	0.1		
Vinyl chloride	mg/kg	0.1		
Halogenated Benzenes				
1,2,3-trichlorobenzene	mg/kg	0.1		
1,2,4-trichlorobenzene	mg/kg	0.1		
1,2-dichlorobenzene	mg/kg	0.1		
1,3-dichlorobenzene	mg/kg	0.1		
1,4-dichlorobenzene	mg/kg	0.1		
2-chlorotoluene	mg/kg	0.1		
4-chlorotoluene	mg/kg	0.1		
Bromobenzene	mg/kg	0.1		
Chlorobenzene	mg/kg	0.1		
Hexachlorobenzene	µg/kg	100		
Halogenated Hydrocarbons				
1,2-dibromoethane	mg/kg	0.1		
Bromomethane	mg/kg	1		
Dichlorodifluoromethane	mg/kg	1		
Iodomethane	mg/kg	5		
Trichlorofluoromethane	mg/kg	1		
Inorganics				
% Moisture	mg/kg	5000	<5000	<5000
Fluoride (Filtered)	mg/kg	0.5		
MAH				
Total MAH	mg/kg	1.8		
1,2,4-trimethylbenzene	mg/kg	0.1		
1,3,5-trimethylbenzene	mg/kg	0.1		
Isopropylbenzene	mg/kg	0.1		
n-butylbenzene	mg/kg	0.1		
n-propylbenzene	mg/kg	0.1		
p-isopropyltoluene	mg/kg	0.1		
sec-butylbenzene	mg/kg	0.1		
Styrene	mg/kg	0.1		
tert-butylbenzene	mg/kg	0.1		
Metals				
Arsenic	mg/kg	3		
Boron	mg/kg	5		
Cadmium	mg/kg	0.3		
Chromium (III+VI)	mg/kg	0.3		
Copper	mg/kg	0.5		
Lead	mg/kg	1		
Mercury	mg/kg	0.01		
Nickel	mg/kg	0.5		
Selenium	mg/kg	3		
Zinc	mg/kg	0.5		
Organochlorine Pesticides				

Soil Blank Results

Field Blanks (soil) Filter: SDG in('SE147182','SE147182-1','SE146247		**SDG** **Field ID** **Sampled_Date/Time** **Sample Type**	SE145989-1 Tripblank 10/11/2015 Trip_B	SE146247-1 Trip Blank 16/11/2015 Trip_B
2,4-DDT	mg/kg	0.1		
4,4-DDE	µg/kg	100		
a-BHC	µg/kg	100		
Aldrin	µg/kg	100		
b-BHC	µg/kg	100		
Chlordane (cis)	µg/kg	100		
gamma-Chlordane	mg/kg	0.1		
d-BHC	µg/kg	100		
DDD	µg/kg	100		
DDT	µg/kg	100		
Dieldrin	µg/kg	200		
Endosulfan I	µg/kg	200		
Endosulfan II	µg/kg	200		
Endosulfan sulphate	µg/kg	100		
Endrin	µg/kg	200		
Endrin aldehyde	µg/kg	100		
Endrin ketone	µg/kg	100		
g-BHC (Lindane)	µg/kg	100		
Heptachlor	µg/kg	100		
Heptachlor epoxide	µg/kg	100		
Methoxychlor	µg/kg	100		
o,p-DDD	mg/kg	0.1		
o,p'-DDE	mg/kg	0.1		
trans-Nonachlor	mg/kg	0.1		
Organophosphorous Pesticides				
Azinophos methyl	mg/kg	0.2		
Bromophos-ethyl	mg/kg	0.2		
Chlorpyrifos	mg/kg	0.2		
Diazinon	mg/kg	0.5		
Dichlorvos	mg/kg	0.5		
Dimethoate	mg/kg	0.5		
Ethion	mg/kg	0.2		
Fenitrothion	mg/kg	0.2		
Malathion	mg/kg	0.2		
Methidathion	mg/kg	0.5		
Other				
Estimated Fibres	mg/kg	100		
PAH				
Benzo(b+j)fluoranthene	mg/kg	0.1		
PAH/Phenols				
1-Methylnaphthalene	mg/kg	0.1		
2-methylnaphthalene	mg/kg	0.1		
Acenaphthene	mg/kg	0.1		
Acenaphthylene	mg/kg	0.1		
Anthracene	mg/kg	0.1		
Benz(a)anthracene	mg/kg	0.1		
Benzo(a) pyrene	mg/kg	0.1		
Benzo(b+k)fluoranthene	mg/kg	0.2		
Benzo(g,h,i)perylene	mg/kg	0.1		
Benzo(k)fluoranthene	mg/kg	0.1		
Chrysene	mg/kg	0.1		
Dibenz(a,h)anthracene	mg/kg	0.1		
Carcinogenic PAHs (as B(a)P TPE)	mg/kg	0.2		
Carcinogenic PAHs (as B(a)P TPE, PEFx3)	mg/kg	0.3		
Fluoranthene	mg/kg	0.1		
Fluorene	mg/kg	0.1		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.1		
Naphthalene	mg/kg	0.1	<0.1	<0.1
PAHs (Sum of total)	mg/kg	0.8		
Phenanthrene	mg/kg	0.1		
Pyrene	mg/kg	0.1		
PCBs				
Arochlor 1016	mg/kg	0.2		
Arochlor 1221	mg/kg	0.2		
Arochlor 1232	mg/kg	0.2		
Arochlor 1242	mg/kg	0.2		
Arochlor 1248	mg/kg	0.2		
Arochlor 1254	mg/kg	0.2		
Arochlor 1260	mg/kg	0.2		
Arochlor 1268	mg/kg	0.2		
Aroclor 1262	mg/kg	0.2		
PCBs (Sum of total)	mg/kg	1		
Pesticides				
Isodrin	mg/kg	0.1		
Mirex	mg/kg	0.1		
Parathion	mg/kg	0.2		
Solvents				
Methyl Ethyl Ketone	mg/kg	10		
2-hexanone (MBK)	mg/kg	5		
4-Methyl-2-pentanone	mg/kg	1		
Acetone	mg/kg	10		
Acrylonitrile	mg/kg	0.1		
Allyl chloride	mg/kg	0.1		
Carbon disulfide	mg/kg	0.5		
MTBE	mg/kg	0.1		
Vinyl acetate	mg/kg	10		
TPH				

Soil Blank Results

Field Blanks (soil) Filter: SDG in('SE147182','SE147182-1','SE146247		**SDG** **Field ID** **Sampled_Date/Time** **Sample Type**	SE145989-1 Tripblank 10/11/2015 Trip_B	SE146247-1 Trip Blank 16/11/2015 Trip_B
TRH C37-C40	mg/kg	100		
C6 - C9	mg/kg	20		
C10 - C14	mg/kg	20		
C15 - C28	mg/kg	45		
C29-C36	mg/kg	45		
+C10 - C36 (Sum of total)	mg/kg	110		
C10 - C40 (Sum of total)	mg/kg	210		
TRH				
C6-C10	mg/kg	25		
C6-C10 less BTEX (F1)	mg/kg	25		
C10-C16	mg/kg	25		
F2-NAPHTHALENE	mg/kg	25		
C16-C34	mg/kg	90		
C34-C40	mg/kg	120		
VOCs				
2-Nitropropane	mg/kg	10		
cis-1,4-Dichloro-2-butene	mg/kg	1		
trans-1,4-Dichloro-2-butene	mg/kg	1		
Total THM	mg/kg	0.4		

Soil RPD Results

Field Duplicates (soil) Filter: SDG in(		SDG Field ID Sampled Date/Time	SE145989-1 T_1_ESMW01_1.0 10/11/2015	SE145989-1 DUPJO101115 10/11/2015	RPD	SE145989-1 T_2_ESMW02_0.5 10/11/2015	SE145989-1 DUPJO111115 10/11/2015
ChemName	**Units**	**EQL**					
Asbestos							
Asbestos fi	-	0					
Metals							
Arsenic	mg/kg	3 : 4 (Interlab)	7	<3	80	7	4
Boron	mg/kg	5 : 3 (Interlab)					
Cadmium	mg/kg	0.3 : 0.4 (Interlab)	<0.3	<0.3	0	0.4	<0.3
Chromium	mg/kg	0.3 : 1 (Interlab)	**13**	**7.5**	**54**	**36**	**15**
Copper	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	**0.9**	**2.9**
Lead	mg/kg	1	9	5	57	14	16
Mercury	mg/kg	0.01 : 0.1 (Interlab)	<0.01	<0.01	0	<0.01	<0.01
Nickel	mg/kg	0.5 : 1 (Interlab)	<0.5	<0.5	0	1.4	1.2
Selenium	mg/kg	3 : 2 (Interlab)					
Zinc	mg/kg	0.5 : 1 (Interlab)	2.5	1.2	70	**9.2**	**21**
Inorganics							
% Moisture	mg/kg	5000	210000	210000	0	**300000**	**180000**
Fluoride (F	mg/kg	0.5					
BTEX							
Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Benzene	mg/kg	0.1 : 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Toluene	mg/kg	0.1 : 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Ethylbenze	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Xylene (m	mg/kg	0.2 : 2 (Interlab)	<0.2	<0.2	0	<0.2	<0.2
Xylene (o)	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Xylene Tot	mg/kg	0.3	<0.3	<0.3	0	<0.3	<0.3
Total BTEX	mg/kg	0.6	<0.6	<0.6	0	<0.6	<0.6
TRH							
C6-C10	mg/kg	25	<25	<25	0	<25	<25
C6-C10 les	mg/kg	25	<25	<25	0	<25	<25
C10-C16	mg/kg	25 : 50 (Interlab)	<25	<25	0	<25	<25
F2-NAPHT	mg/kg	25 : 50 (Interlab)	<25	<25	0	<25	<25
C16-C34	mg/kg	90 : 100 (Interlab)	<90	<90	0	<90	<90
C34-C40	mg/kg	120 : 100 (Interlab)	<120	<120	0	<120	<120
TPH							
TRH C37-C	mg/kg	100	<100	<100	0	<100	<100
C6 - C9	mg/kg	20 : 25 (Interlab)	<20	<20	0	<20	<20
C10 - C14	mg/kg	20 : 50 (Interlab)	<20	<20	0	<20	<20
C15 - C28	mg/kg	45 : 100 (Interlab)	<45	<45	0	<45	<45
C29-C36	mg/kg	45 : 100 (Interlab)	<45	<45	0	<45	<45
+C10 - C36	mg/kg	110	<110	<110	0	<110	<110
C10 - C40	mg/kg	210	<210	<210	0	<210	<210
MAH							
1,2,4-trime	mg/kg	0.1 : 1 (Interlab)					
1,3,5-trime	mg/kg	0.1 : 1 (Interlab)					
Isopropylbe	mg/kg	0.1 : 1 (Interlab)					
n-butylbenz	mg/kg	0.1 : 1 (Interlab)					
n-propylbe	mg/kg	0.1 : 1 (Interlab)					
p-isopropyl	mg/kg	0.1 : 1 (Interlab)					
sec-butylbe	mg/kg	0.1 : 1 (Interlab)					
Styrene	mg/kg	0.1 : 1 (Interlab)					
tert-butylbe	mg/kg	0.1 : 1 (Interlab)					
PAH							
Benzo(b+j)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1
PAH/Phenols							
1-Methylna	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1
2-methylna	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Anthracene	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Benz(a)ant	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Benzo(a) p	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Benzo(g,h,	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Benzo(k)flu	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1
Chrysene	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Dibenz(a,h	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Carcinogen	mg/kg	0.2 TEQ (mg/kg)	<0.2	<0.2	0	<0.2	<0.2
Carcinogen	mg/kg	0.3 TEQ (mg/kg)	<0.3	<0.3	0	<0.3	<0.3
Fluoranthe	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	0.1	<0.1
Fluorene	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Indeno(1,2	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Naphthalen	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Naphthalen	mg/kg	0.1 : 1 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
PAHs (Sum	mg/kg	0.8	<0.8	<0.8	0	<0.8	<0.8
Phenanthre	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	<0.1	<0.1
Pyrene	mg/kg	0.1 : 0.01 (Interlab)	<0.1	<0.1	0	0.1	<0.1
VOCs							
2-Nitroprop	mg/kg	10					
cis-1,4-Dic	mg/kg	1					
trans-1,4-D	mg/kg	1					
Chlorinated Hydrocarbons							
1,1,1,2-tetr	mg/kg	0.1 : 1 (Interlab)					
1,1,1-trichl	mg/kg	0.1 : 1 (Interlab)					
1,1,2,2-tetr	mg/kg	0.1 : 1 (Interlab)					
1,1,2-trichl	mg/kg	0.1 : 1 (Interlab)					
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)					
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)					
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)					
2,2-dichlor	mg/kg	0.1 : 1 (Interlab)					
Bromochlo	mg/kg	0.1 : 1 (Interlab)					
Bromodich	mg/kg	0.1 : 1 (Interlab)					
Bromoform	mg/kg	0.1 : 1 (Interlab)					

Soil RPD Results

Field Duplicates (soil)		SDG	SE145989-1	SE145989-1		SE145989-1	SE145989-1
Filter: SDG in(		Field ID	T_1_ESMW01_1.0	DUPJO101115	RPD	T_2_ESMW02_0.5	DUPJO111115
		Sampled Date/Time	10/11/2015	10/11/2015		10/11/2015	10/11/2015
Carbon tet	mg/kg	0.1 : 1 (Interlab)					
Chlorodibr	mg/kg	0.1 : 1 (Interlab)					
Chloroetha	mg/kg	1					
Chloroform	mg/kg	0.1 : 1 (Interlab)					
Chlorometh	mg/kg	1					
cis-1,2-dich	mg/kg	0.1 : 1 (Interlab)					
cis-1,3-dich	mg/kg	0.1 : 1 (Interlab)					
Dibromome	mg/kg	0.1 : 1 (Interlab)					
Dichlorome	mg/kg	0.5					
Hexachlorb	mg/kg	0.1 : 1 (Interlab)					
Trichloroeth	mg/kg	0.1 : 1 (Interlab)					
Tetrachlorb	mg/kg	0.1 : 1 (Interlab)					
trans-1,2-d	mg/kg	0.1 : 1 (Interlab)					
trans-1,3-d	mg/kg	0.1 : 1 (Interlab)					
Vinyl chlori	mg/kg	0.1 : 1 (Interlab)					
Organochlorine Pesticides							
2,4-DDT	mg/kg	0.1					
4,4-DDE	µg/kg	100					
a-BHC	µg/kg	100					
Aldrin	µg/kg	100					
b-BHC	µg/kg	100					
Chlordane	µg/kg	100					
gamma-Ch	mg/kg	0.1					
d-BHC	µg/kg	100					
DDD	µg/kg	100					
DDT	µg/kg	100					
Dieldrin	µg/kg	200					
Endosulfan	µg/kg	200					
Endosulfan	µg/kg	200					
Endosulfan	µg/kg	100					
Endrin	µg/kg	200					
Endrin alde	µg/kg	100					
Endrin ketc	µg/kg	100					
g-BHC (Lin	µg/kg	100					
Heptachlor	µg/kg	100					
Heptachlor	µg/kg	100					
Methoxych	µg/kg	100					
o,p-DDD	mg/kg	0.1					
o,p'-DDE	mg/kg	0.1					
trans-Nona	mg/kg	0.1					
Organophosphorous Pesticides							
Azinophos	mg/kg	0.2					
Bromophos	mg/kg	0.2					
Chlorpyrifo	mg/kg	0.2					
Diazinon	mg/kg	0.5					
Dichlorvos	mg/kg	0.5					
Dimethoate	mg/kg	0.5					
Ethion	mg/kg	0.2					
Fenitrothio	mg/kg	0.2					
Malathion	mg/kg	0.2					
Methidathi	mg/kg	0.5					
PCBs							
Arochlor 10	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Arochlor 12	mg/kg	0.2				<0.2	<0.2
Aroclor 126	mg/kg	0.2				<0.2	<0.2
PCBs (Sur	mg/kg	1				<1	<1
Pesticides							
Isodrin	mg/kg	0.1					
Mirex	mg/kg	0.1					
Parathion	mg/kg	0.2					
Halogenated Hydrocarbons							
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)					
Bromometh	mg/kg	1					
Dichlorodif	mg/kg	1					
Iodometha	mg/kg	5					
Trichloroflu	mg/kg	1					
Halogenated Benzenes							
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)					
1,2,4-trichl	mg/kg	0.1 : 1 (Interlab)					
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)					
1,4-dichlor	mg/kg	0.1 : 1 (Interlab)					
2-chlorotol	mg/kg	0.1 : 1 (Interlab)					
4-chlorotol	mg/kg	0.1 : 1 (Interlab)					
Bromoben	mg/kg	0.1 : 1 (Interlab)					
Chloroben	mg/kg	0.1 : 1 (Interlab)					
Hexachlor	µg/kg	100					
Other							
Estimated	mg/kg	100					
Solvents							
Methyl Eth	mg/kg	10					
2-hexanon	mg/kg	5					
4-Methyl-2	mg/kg	1					
Acetone	mg/kg	10					
Acrylonitril	mg/kg	0.1					
Allyl chlori	mg/kg	0.1					
Carbon dis	mg/kg	0.5					
MTBE	mg/kg	0.1					
Vinyl aceta	mg/kg	10					

*RPDs have only been considered where a concentration is greater than 1 times the EQL.

Soil RPD Results

Field Duplicates (soil)	**SDG**	SE145989-1	SE145989-1		SE145989-1	SE145989-1
Filter: SDG in(	**Field ID**	T_1_ESMW01_1.0	DUPJO101115	**RPD**	T_2_ESMW02_0.5	DUPJO111115
	Sampled Date/Time	10/11/2015	10/11/2015		10/11/2015	10/11/2015

**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 80 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header

Soil RPD Results

Field Duplicates (soil) Filter: SDG in(	SDG Field ID Sampled Date/Time	RPD	SE146247-1 T_6_SD01 16/11/2015	SE146247-1 DUPGS161115 16/11/2015	RPD	SE146247-1 T_SG01 18/11/2015	SE146247-1 DUPGS181115 18/11/2015	RPD	SE146247-1 T_ESMW10_1 18/11/2015	SE146247-1 DUPJO181115 18/11/2015	RPD	SE146247-1 T_6_SD01 16/11/2015	Interlab_D TRIPGS161115 16/11/2015	RPD
ChemName	**Units**	**EQL**												
Asbestos														
Asbestos fi	-	0				0.0E0	0.0E0	0						
Metals														
Arsenic	mg/kg	3 : 4 (Interlab)	55	3	5	50				<3	<3	0	**3**	**9**	**100**
Boron	mg/kg	5 : 3 (Interlab)		<5	<5	0				<5	<5	0	<5	<3	0
Cadmium	mg/kg	0.3 : 0.4 (Interlab)	29	<0.3	<0.3	0				<0.3	<0.3	0	<0.3	<0.4	0
Chromium	mg/kg	0.3 : 1 (Interlab)	**82**	4.6	5	8				4.2	5.5	27	**4.6**	**8**	**54**
Copper	mg/kg	0.5 : 1 (Interlab)	**105**	1.7	1.4	19				0.6	0.7	15	1.7	3	55
Lead	mg/kg	1	13	9	9	0	19	16	17	5	3	50	9	12	29
Mercury	mg/kg	0.01 : 0.1 (Interlab)	0	<0.01	<0.01	0				0.01	<0.01	0	<0.01	<0.1	0
Nickel	mg/kg	0.5 : 1 (Interlab)	15	0.8	<0.5	46				<0.5	<0.5	0	0.8	1	22
Selenium	mg/kg	3 : 2 (Interlab)		<3	<3	0				<3	<3	0	<3	<2	0
Zinc	mg/kg	0.5 : 1 (Interlab)	**78**	**10**	**5.9**	**52**				1.4	1.3	7	10	8	22
Inorganics														
% Moisture	mg/kg	5000	**50**	260000	330000	24	230000	210000	9	150000	170000	13	260000		
Fluoride (F	mg/kg	0.5					1	1.7	52						
BTEX														
Benzene	mg/kg	0.1 : 0.2 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.2	0
Benzene	mg/kg	0.1 : 0.2 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.2	0
Toluene	mg/kg	0.1 : 0.5 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.5	0
Ethylbenze	mg/kg	0.1 : 1 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<1	0
Xylene (m	mg/kg	0.2 : 2 (Interlab)	0	<0.2	<0.2	0				<0.2	<0.2	0	<0.2	<2	0
Xylene (o)	mg/kg	0.1 : 1 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<1	0
Xylene Tot	mg/kg	0.3	0	<0.3	<0.3	0				<0.3	<0.3	0	<0.3		
Total BTEX	mg/kg	0.6	0	<0.6	<0.6	0				<0.6	<0.6	0	<0.6		
TRH														
C6-C10	mg/kg	25	0	<25	<25	0				<25	<25	0	<25	<25	0
C6-C10 les	mg/kg	25	0	<25	<25	0				<25	<25	0	<25	<25	0
C10-C16	mg/kg	25 : 50 (Interlab)	0	<25	<25	0				<25	<25	0	<25	<50	0
F2-NAPHT	mg/kg	25 : 50 (Interlab)	0	<25	<25	0				<25	<25	0	<25	<50	0
C16-C34	mg/kg	90 : 100 (Interlab)	0	<90	<90	0				<90	<90	0	<90	<100	0
C34-C40	mg/kg	120 : 100 (Interlab)	0	<120	<120	0				<120	<120	0	<120	<100	0
TPH														
TRH C37-(	mg/kg	100	0	<100	<100	0				<100	<100	0	<100		
C6 - C9	mg/kg	20 : 25 (Interlab)	0	<20	<20	0				<20	<20	0	<20	<25	0
C10 - C14	mg/kg	20 : 50 (Interlab)	0	<20	<20	0				<20	<20	0	<20	<50	0
C15 - C28	mg/kg	45 : 100 (Interlab)	0	<45	<45	0				<45	<45	0	<45	<100	0
C29-C36	mg/kg	45 : 100 (Interlab)	0	<45	<45	0				<45	<45	0	<45	<100	0
+C10 - C36	mg/kg	110	0	<110	<110	0				<110	<110	0	<110		
C10 - C40	mg/kg	210	0	<210	<210	0				<210	<210	0	<210		
MAH														
1,2,4-trime	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,3,5-trime	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Isopropylbe	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
n-butylben	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
n-propylbe	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
p-isopropyl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
sec-butylbe	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Styrene	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
tert-butylbe	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
PAH														
Benzo(b+j)	mg/kg	0.1	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1		
PAH/Phenols														
1-Methylna	mg/kg	0.1	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1		
2-methylna	mg/kg	0.1	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1		
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Anthracene	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Benz(a)ant	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Benzo(a) p	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Benzo(g,h,	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Benzo(k)flu	mg/kg	0.1	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1		
Chrysene	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Dibenz(a,h	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Carcinogen	mg/kg	0.2 TEQ (mg/kg)	0	<0.2	<0.2	0				<0.2	<0.2	0	<0.2		
Carcinogen	mg/kg	0.3 TEQ (mg/kg)	0	<0.3	<0.3	0				<0.3	<0.3	0	<0.3		
Fluoranthe	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Fluorene	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Indeno(1,2	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Naphthalen	mg/kg	0.1 : 1 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Naphthalen	mg/kg	0.1 : 1 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
PAHs (Sum	mg/kg	0.8	0	<0.8	<0.8	0				<0.8	<0.8	0	<0.8		
Phenanthre	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
Pyrene	mg/kg	0.1 : 0.01 (Interlab)	0	<0.1	<0.1	0				<0.1	<0.1	0	<0.1	<0.01	0
VOCs														
2-Nitroprop	mg/kg	10		<10	<10	0							<10		
cis-1,4-Dic	mg/kg	1		<1	<1	0							<1		
trans-1,4-D	mg/kg	1		<1	<1	0							<1		
Chlorinated Hydrocarbons														
1,1,1,2-tetr	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1,1-trichl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1,2,2-tetr	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1,2-trichl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
2,2-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Bromochlo	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Bromodich	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Bromoform	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0

Soil RPD Results

Field Duplicates (soil)		SDG		SE146247-1	SE146247-1		SE146247-1	SE146247-1		SE146247-1	SE146247-1		SE146247-1	Interlab_D	
Filter: SDG in(		Field ID	RPD	T_6_SD01	DUPGS161115	RPD	T_SG01	DUPGS181115	RPD	T_ESMW10_1	DUPJO181115	RPD	T_6_SD01	TRIPGS161115	RPD
		Sampled Date/Time		16/11/2015	16/11/2015		18/11/2015	18/11/2015		18/11/2015	18/11/2015		16/11/2015	16/11/2015	
Carbon tet	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Chlorodibro	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Chloroetha	mg/kg	1		<1	<1	0							<1	<1	0
Chloroform	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Chlorometh	mg/kg	1		<1	<1	0							<1	<1	0
cis-1,2-dich	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
cis-1,3-dich	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Dibromome	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Dichlorome	mg/kg	0.5		<0.5	<0.5	0							<0.5		
Hexachlorb	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Trichloroeth	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Tetrachlorb	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
trans-1,2-d	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
trans-1,3-d	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Vinyl chlori	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Organochlorine Pesticides															
2,4-DDT	mg/kg	0.1								<0.1	<0.1	0			
4,4-DDE	µg/kg	100								<100	<100	0			
a-BHC	µg/kg	100								<100	<100	0			
Aldrin	µg/kg	100								<100	<100	0			
b-BHC	µg/kg	100								<100	<100	0			
Chlordane	µg/kg	100								<100	<100	0			
gamma-Ch	mg/kg	0.1								<0.1	<0.1	0			
d-BHC	µg/kg	100								<100	<100	0			
DDD	µg/kg	100								<100	<100	0			
DDT	µg/kg	100								<100	<100	0			
Dieldrin	µg/kg	200								<200	<200	0			
Endosulfan	µg/kg	200								<200	<200	0			
Endosulfan	µg/kg	200								<200	<200	0			
Endosulfan	µg/kg	100								<100	<100	0			
Endrin	µg/kg	200								<200	<200	0			
Endrin alde	µg/kg	100								<100	<100	0			
Endrin ketc	µg/kg	100								<100	<100	0			
g-BHC (Lin	µg/kg	100								<100	<100	0			
Heptachlor	µg/kg	100								<100	<100	0			
Heptachlor	µg/kg	100								<100	<100	0			
Methoxych	µg/kg	100								<100	<100	0			
o,p-DDD	mg/kg	0.1								<0.1	<0.1	0			
o,p'-DDE	mg/kg	0.1								<0.1	<0.1	0			
trans-Nona	mg/kg	0.1								<0.1	<0.1	0			
Organophosphorous Pesticides															
Azinophos	mg/kg	0.2								<0.2	<0.2	0			
Bromophos	mg/kg	0.2								<0.2	<0.2	0			
Chlorpyrifo	mg/kg	0.2								<0.2	<0.2	0			
Diazinon	mg/kg	0.5								<0.5	<0.5	0			
Dichlorvos	mg/kg	0.5								<0.5	<0.5	0			
Dimethoate	mg/kg	0.5								<0.5	<0.5	0			
Ethion	mg/kg	0.2								<0.2	<0.2	0			
Fenitrothio	mg/kg	0.2								<0.2	<0.2	0			
Malathion	mg/kg	0.2								<0.2	<0.2	0			
Methidathi	mg/kg	0.5								<0.5	<0.5	0			
PCBs															
Arochlor 10	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Arochlor 12	mg/kg	0.2	0												
Aroclor 126	mg/kg	0.2	0												
PCBs (Sum	mg/kg	1	0												
Pesticides															
Isodrin	mg/kg	0.1								<0.1	<0.1	0			
Mirex	mg/kg	0.1								<0.1	<0.1	0			
Parathion	mg/kg	0.2								<0.2	<0.2	0			
Halogenated Hydrocarbons															
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Bromometh	mg/kg	1		<1	<1	0							<1	<1	0
Dichlorodifl	mg/kg	1		<1	<1	0							<1	<1	0
Iodomethan	mg/kg	5		<5	<5	0							<5		
Trichlorofluo	mg/kg	1		<1	<1	0							<1	<1	0
Halogenated Benzenes															
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2,4-trichl	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
1,4-dichlor	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
2-chlorotol	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
4-chlorotol	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Bromobenz	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Chlorobenz	mg/kg	0.1 : 1 (Interlab)		<0.1	<0.1	0							<0.1	<1	0
Hexachlorb	µg/kg	100								<100	<100	0			
Other															
Estimated	mg/kg	100					0.0E0	0.0E0	0						
Solvents															
Methyl Eth	mg/kg	10		<10	<10	0							<10		
2-hexanon	mg/kg	5		<5	<5	0							<5		
4-Methyl-2	mg/kg	1		<1	<1	0							<1		
Acetone	mg/kg	10		<10	<10	0							<10		
Acrylonitrile	mg/kg	0.1		<0.1	<0.1	0							<0.1		
Allyl chlorid	mg/kg	0.1		<0.1	<0.1	0							<0.1		
Carbon dis	mg/kg	0.5		<0.5	<0.5	0							<0.5		
MTBE	mg/kg	0.1		<0.1	<0.1	0							<0.1		
Vinyl aceta	mg/kg	10		<10	<10	0							<10		

*RPDs have only been considered where a conc

Soil RPD Results

Field Duplicates (soil)															
Filter: SDG in(	**SDG**		SE146247-1	SE146247-1		SE146247-1	SE146247-1		SE146247-1	SE146247-1		SE146247-1	Interlab_D	
	Field ID	**RPD**	T_6_SD01	DUPGS161115	**RPD**	T_SG01	DUPGS181115	**RPD**	T_ESMW10_1	DUPJO181115	**RPD**	T_6_SD01	TRIPGS161115	**RPD**
	Sampled Date/Time		16/11/2015	16/11/2015		18/11/2015	18/11/2015		18/11/2015	18/11/2015		16/11/2015	16/11/2015	

**High RPDs are in bold (Acceptable RPDs for
***Interlab Duplicates are matched on a per com relate to those used in the primary laboratory

Soil RPD Results

Field Duplicates (soil)	SDG	SE146247-1	Interlab_D		SE146247-1	Interlab_D		SE146247-1	Interlab_D	
Filter: SDG in(	Field ID	T_SG01	TRIPGS181115	RPD	T_ESMW10_1	TRIPJO181115	RPD	T_SG01	TRIPGS181115	RPD
	Sampled Date/Time	18/11/2015	18/11/2015		18/11/2015	18/11/2015		18/11/2015	18/11/2015	
ChemName	**Units**	**EQL**								
Asbestos										
Asbestos fi	-	0	0.0E0	0.0E0	0			0.0E0	0.0E0	0
Metals										
Arsenic	mg/kg	3 : 4 (Interlab)			<3	<4	0			
Boron	mg/kg	5 : 3 (Interlab)			<5	<3	0			
Cadmium	mg/kg	0.3 : 0.4 (Interlab)			<0.3	<0.4	0			
Chromium	mg/kg	0.3 : 1 (Interlab)			4.2	5	17			
Copper	mg/kg	0.5 : 1 (Interlab)			0.6	1	50			
Lead	mg/kg	1	19	22	15	5	4	22	19	16	17
Mercury	mg/kg	0.01 : 0.1 (Interlab)			0.01	<0.1	0			
Nickel	mg/kg	0.5 : 1 (Interlab)			<0.5	<1	0			
Selenium	mg/kg	3 : 2 (Interlab)			<3	<2	0			
Zinc	mg/kg	0.5 : 1 (Interlab)			1.4	3	73			
Inorganics										
% Moisture	mg/kg	5000	230000		150000			230000		
Fluoride (F	mg/kg	0.5	1					1		
BTEX										
Benzene	mg/kg	0.1 : 0.2 (Interlab)			<0.1	<0.2	0			
Benzene	mg/kg	0.1 : 0.2 (Interlab)			<0.1	<0.2	0			
Toluene	mg/kg	0.1 : 0.5 (Interlab)			<0.1	<0.5	0			
Ethylbenze	mg/kg	0.1 : 1 (Interlab)			<0.1	<1	0			
Xylene (m	mg/kg	0.2 : 2 (Interlab)			<0.2	<2	0			
Xylene (o)	mg/kg	0.1 : 1 (Interlab)			<0.1	<1	0			
Xylene Tot	mg/kg	0.3			<0.3					
Total BTEX	mg/kg	0.6			<0.6					
TRH										
C6-C10	mg/kg	25			<25	<25	0			
C6-C10 les	mg/kg	25			<25	<25	0			
C10-C16	mg/kg	25 : 50 (Interlab)			<25	<50	0			
F2-NAPHT	mg/kg	25 : 50 (Interlab)			<25	<50	0			
C16-C34	mg/kg	90 : 100 (Interlab)			<90	<100	0			
C34-C40	mg/kg	120 : 100 (Interlab)			<120	<100	0			
TPH										
TRH C37-C	mg/kg	100			<100					
C6 - C9	mg/kg	20 : 25 (Interlab)			<20	<25	0			
C10 - C14	mg/kg	20 : 50 (Interlab)			<20	<50	0			
C15 - C28	mg/kg	45 : 100 (Interlab)			<45	<100	0			
C29-C36	mg/kg	45 : 100 (Interlab)			<45	<100	0			
+C10 - C36	mg/kg	110			<110					
C10 - C40	mg/kg	210			<210					
MAH										
1,2,4-trime	mg/kg	0.1 : 1 (Interlab)								
1,3,5-trime	mg/kg	0.1 : 1 (Interlab)								
Isopropylbe	mg/kg	0.1 : 1 (Interlab)								
n-butylbenz	mg/kg	0.1 : 1 (Interlab)								
n-propylbe	mg/kg	0.1 : 1 (Interlab)								
p-isopropyl	mg/kg	0.1 : 1 (Interlab)								
sec-butylbe	mg/kg	0.1 : 1 (Interlab)								
Styrene	mg/kg	0.1 : 1 (Interlab)								
tert-butylbe	mg/kg	0.1 : 1 (Interlab)								
PAH										
Benzo(b+j)	mg/kg	0.1			<0.1					
PAH/Phenols										
1-Methylna	mg/kg	0.1			<0.1					
2-methylna	mg/kg	0.1			<0.1					
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Acenaphth	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Anthracene	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Benz(a)ant	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Benzo(a) p	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Benzo(g,h,	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Benzo(k)flu	mg/kg	0.1			<0.1					
Chrysene	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Dibenz(a,h	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Carcinoger	mg/kg	0.2 TEQ (mg/kg)			<0.2					
Carcinoger	mg/kg	0.3 TEQ (mg/kg)			<0.3					
Fluoranthe	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Fluorene	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Indeno(1,2	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Naphthaler	mg/kg	0.1 : 1 (Interlab)			<0.1	<0.01	0			
Naphthaler	mg/kg	0.1 : 1 (Interlab)			<0.1	<0.01	0			
PAHs (Sun	mg/kg	0.8			<0.8					
Phenanthre	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
Pyrene	mg/kg	0.1 : 0.01 (Interlab)			<0.1	<0.01	0			
VOCs										
2-Nitroprop	mg/kg	10								
cis-1,4-Dic	mg/kg	1								
trans-1,4-D	mg/kg	1								
Chlorinated Hydrocarbons										
1,1,1,2-tetr	mg/kg	0.1 : 1 (Interlab)								
1,1,1-trichl	mg/kg	0.1 : 1 (Interlab)								
1,1,2,2-tetr	mg/kg	0.1 : 1 (Interlab)								
1,1,2-trichl	mg/kg	0.1 : 1 (Interlab)								
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)								
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)								
1,1-dichlor	mg/kg	0.1 : 1 (Interlab)								
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)								
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)								
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)								
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)								
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)								
2,2-dichlor	mg/kg	0.1 : 1 (Interlab)								
Bromochlo	mg/kg	0.1 : 1 (Interlab)								
Bromodich	mg/kg	0.1 : 1 (Interlab)								
Bromoform	mg/kg	0.1 : 1 (Interlab)								

Soil RPD Results

Field Duplicates (soil)		SDG	SE146247-1	Interlab_D		SE146247-1	Interlab_D		SE146247-1	Interlab_D	
Filter: SDG in(		Field ID	T_SG01	TRIPGS181115	RPD	T_ESMW10_1	TRIPJO181115	RPD	T_SG01	TRIPGS181115	RPD
		Sampled Date/Time	18/11/2015	18/11/2015		18/11/2015	18/11/2015		18/11/2015	18/11/2015	
Carbon tet	mg/kg	0.1 : 1 (Interlab)									
Chlorodibro	mg/kg	0.1 : 1 (Interlab)									
Chloroetha	mg/kg	1									
Chloroform	mg/kg	0.1 : 1 (Interlab)									
Chlorometh	mg/kg	1									
cis-1,2-dich	mg/kg	0.1 : 1 (Interlab)									
cis-1,3-dich	mg/kg	0.1 : 1 (Interlab)									
Dibromome	mg/kg	0.1 : 1 (Interlab)									
Dichlorome	mg/kg	0.5									
Hexachlorb	mg/kg	0.1 : 1 (Interlab)									
Trichloroeth	mg/kg	0.1 : 1 (Interlab)									
Tetrachlorb	mg/kg	0.1 : 1 (Interlab)									
trans-1,2-d	mg/kg	0.1 : 1 (Interlab)									
trans-1,3-d	mg/kg	0.1 : 1 (Interlab)									
Vinyl chlori	mg/kg	0.1 : 1 (Interlab)									
Organochlorine Pesticides											
2,4-DDT	mg/kg	0.1				<0.1					
4,4-DDE	µg/kg	100				<100					
a-BHC	µg/kg	100				<100					
Aldrin	µg/kg	100				<100					
b-BHC	µg/kg	100				<100					
Chlordane	µg/kg	100				<100					
gamma-Ch	mg/kg	0.1				<0.1					
d-BHC	µg/kg	100				<100					
DDD	µg/kg	100				<100					
DDT	µg/kg	100				<100					
Dieldrin	µg/kg	200				<200					
Endosulfan	µg/kg	200				<200					
Endosulfan	µg/kg	200				<200					
Endosulfan	µg/kg	100				<100					
Endrin	µg/kg	200				<200					
Endrin alde	µg/kg	100				<100					
Endrin ketc	µg/kg	100				<100					
g-BHC (Lin	µg/kg	100				<100					
Heptachlor	µg/kg	100				<100					
Heptachlor	µg/kg	100				<100					
Methoxych	µg/kg	100				<100					
o,p-DDD	mg/kg	0.1				<0.1					
o,p'-DDE	mg/kg	0.1				<0.1					
trans-Nona	mg/kg	0.1				<0.1					
Organophosphorous Pesticides											
Azinophos	mg/kg	0.2				<0.2					
Bromophos	mg/kg	0.2				<0.2					
Chlorpyrifo	mg/kg	0.2				<0.2					
Diazinon	mg/kg	0.5				<0.5					
Dichlorvos	mg/kg	0.5				<0.5					
Dimethoate	mg/kg	0.5				<0.5					
Ethion	mg/kg	0.2				<0.2					
Fenitrothio	mg/kg	0.2				<0.2					
Malathion	mg/kg	0.2				<0.2					
Methidathi	mg/kg	0.5				<0.5					
PCBs											
Arochlor 10	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Arochlor 12	mg/kg	0.2									
Aroclor 126	mg/kg	0.2									
PCBs (Sun	mg/kg	1									
Pesticides											
Isodrin	mg/kg	0.1				<0.1					
Mirex	mg/kg	0.1				<0.1					
Parathion	mg/kg	0.2				<0.2					
Halogenated Hydrocarbons											
1,2-dibrom	mg/kg	0.1 : 1 (Interlab)									
Bromometh	mg/kg	1									
Dichlorodif	mg/kg	1									
Iodomethan	mg/kg	5									
Trichloroflu	mg/kg	1									
Halogenated Benzenes											
1,2,3-trichl	mg/kg	0.1 : 1 (Interlab)									
1,2,4-trichl	mg/kg	0.1 : 1 (Interlab)									
1,2-dichlor	mg/kg	0.1 : 1 (Interlab)									
1,3-dichlor	mg/kg	0.1 : 1 (Interlab)									
1,4-dichlor	mg/kg	0.1 : 1 (Interlab)									
2-chlorotol	mg/kg	0.1 : 1 (Interlab)									
4-chlorotol	mg/kg	0.1 : 1 (Interlab)									
Bromoben	mg/kg	0.1 : 1 (Interlab)									
Chlorobenz	mg/kg	0.1 : 1 (Interlab)									
Hexachlorb	µg/kg	100				<100					
Other											
Estimated	mg/kg	100	0.0E0						0.0E0		
Solvents											
Methyl Eth	mg/kg	10									
2-hexanon	mg/kg	5									
4-Methyl-2	mg/kg	1									
Acetone	mg/kg	10									
Acrylonitrile	mg/kg	0.1									
Allyl chlorid	mg/kg	0.1									
Carbon dis	mg/kg	0.5									
MTBE	mg/kg	0.1									
Vinyl aceta	mg/kg	10									

*RPDs have only been considered where a conc

Soil RPD Results

Field Duplicates (soil)
Filter: SDG in(

SDG	SE146247-1	Interlab_D		SE146247-1	Interlab_D		SE146247-1	Interlab_D	
Field ID	T_SG01	TRIPGS181115	**RPD**	T_ESMW10_1	TRIPJO181115	**RPD**	T_SG01	TRIPGS181115	**RPD**
Sampled Date/Time	18/11/2015	18/11/2015		18/11/2015	18/11/2015		18/11/2015	18/11/2015	

**High RPDs are in bold (Acceptable RPDs for
***Interlab Duplicates are matched on a per com

Water RPD Results

Field Duplicates (WATER)
Filter: SDG in('SE147182','SE147

SDG	SE146247-1	SE146247-1		SE146247-1	Interlab_D		SE147182-1	SE147182-1	
Field ID	T_6_SW01	DUPGS161115b	RPD	T_6_SW01	TRIPGS161115b	RPD	T_5_ESMW05	DUPGS091215	RPD
Sampled Date/Time	16/11/2015	16/11/2015		16/11/2015	16/11/2015		15/12/2015	15/12/2015	

ChemName	Units	EQL										
EW_EPA8100_LL												
Total PAH (18)	µg/L	0.1	<0.1	<0.1	0	<0.1						
NA												
Total Coliform Count	cfu/100 ml									<1	5	133
Metals												
Arsenic	µg/L	1	2	2	0	2	2	0		7	7	0
Arsenic (Filtered)	µg/L	1	1	1	0	1	1	0		4	4	0
Boron	µg/L	5	42	40	5	42	32	27				
Boron (Filtered)	µg/L	5	36	35	3	36	32	12				
Cadmium	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0		1	1	0
Cadmium (Filtered)	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.1	0		0.8	0.9	12
Chromium (III+VI)	µg/L	1	2	2	0	2	**5**	**86**		8	10	22
Chromium (III+VI) (Filtered)	µg/L	1	<1	1	0	<1	**3**	**100**		1	<1	0
Copper	µg/L	1	4	4	0	4	4	0		50	50	0
Copper (Filtered)	µg/L	1	5	3	50	5	6	18		42	38	10
Lead	µg/L	1	5	5	0	5	5	0		31	33	6
Lead (Filtered)	µg/L	1	2	1	67	2	2	0		19	18	5
Mercury	µg/l	0.05	**0.07**	**0.17**	**83**	0.07	0.06	15		0.05	0.07	33
Mercury (Filtered)	µg/l	0.05	<0.05	0.07	33	<0.05	<0.05	0		<0.05	<0.05	0
Nickel	µg/L	1	3	3	0	3	3	0		88	87	1
Nickel (Filtered)	µg/L	1	3	2	40	3	2	40		81	79	3
Selenium	µg/L	1	2	2	0	2	<1	67				
Selenium (Filtered)	µg/L	1	<1	<1	0	<1	<1	0				
Zinc	µg/L	5 : 1 (Interlab)	54	50	8	54	52	4		650	500	26
Zinc (Filtered)	µg/L	5 : 1 (Interlab)	43	36	18	43	40	7		500	490	2
BTEX												
Benzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0		<0.5	<0.5	0
Benzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0		<0.5	<0.5	0
Toluene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0		<0.5	<0.5	0
Ethylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0		<0.5	<0.5	0
Xylene (m & p)	µg/L	1 : 2 (Interlab)	<1	<1	0	<1	<2	0		<1	<1	0
Xylene (o)	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0		<0.5	<0.5	0
Xylene Total	µg/L	1.5	<1.5	<1.5	0	<1.5						
Total BTEX	µg/L	3	<3	<3	0	<3						
TRH												
C6-C10	µg/L	50 : 10 (Interlab)	<50	<50	0	<50	<10	0		<50	<50	0
C6-C10 less BTEX (F1)	µg/L	50 : 10 (Interlab)	<50	<50	0	<50	<10	0		<50	<50	0
C10-C16	µg/L	60 : 50 (Interlab)	<60	<60	0	<60	<50	0		<60	<60	0
C16-C34	µg/L	500 : 100 (Interlab)	<500	<500	0	<500	<100	0		<500	590	17
C34-C40	µg/L	500 : 100 (Interlab)	<500	<500	0	<500	<100	0		<500	<500	0
TPH												
TRH C37-C40	µg/L	200	<200	<200	0	<200				<200	<200	0
C6 - C9	µg/L	40 : 10 (Interlab)	<40	<40	0	<40	<10	0		<40	<40	0
C10 - C14	µg/L	50	<50	<50	0	<50	<50	0		<50	<50	0
C15 - C28	µg/L	200 : 100 (Interlab)	<200	<200	0	<200	<100	0		<200	410	69
C29-C36	µg/L	200 : 100 (Interlab)	<200	<200	0	<200	<100	0		<200	<200	0
+C10 - C36 (Sum of total)	µg/L	450	<450	<450	0	<450				<450	<450	0
C10 - C40 (Sum of total)	µg/L	650	<650	<650	0	<650				<650	<650	0
MAH												
1,2,4-trimethylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,3,5-trimethylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Isopropylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
n-butylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
n-propylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
p-isopropyltoluene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
sec-butylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Styrene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
tert-butylbenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
PAH/Phenols												
1-Methylnaphthalene	µg/L	0.01	<0.01	<0.01	0	<0.01				<0.01	0.02	67
2-methylnaphthalene	µg/L	0.01	<0.01	<0.01	0	<0.01				**0.01**	**0.03**	**100**
Acenaphthene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.1	0.12	18
Acenaphthylene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.02	0.03	40
Anthracene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.09	0.13	36
Benz(a)anthracene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		**0.17**	**0.09**	**62**
Benzo(a) pyrene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		**0.14**	**0.24**	**53**
Benzo(b+k)fluoranthene	µg/L	0.02	<0.02	<0.02	0	<0.02				**0.18**	**0.33**	**59**
Benzo(g,h,i)perylene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.08	0.13	48
Chrysene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.19	0.3	45
Dibenz(a,h)anthracene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.02	0.02	0
Fluoranthene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.56	0.7	22
Fluorene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		<0.01	<0.01	0
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.09	0.15	50
Naphthalene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.02	0		<0.5	<0.5	0
Naphthalene	µg/L	0.02 : 1 (Interlab)	<0.02	<0.02	0	<0.02	<0.02	0		0.03	0.04	29
PAHs (Sum of total)	µg/L	0.1	<0.1	<0.1	0	<0.1				**2.5**	**3.4**	**31**
Phenanthrene	µg/L	0.01	<0.01	<0.01	0	**<0.01**	**0.03**	**100**		**0.3**	**0.47**	**44**
Pyrene	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.01	0		0.5	0.67	29
VOCs												
2-Nitropropane	µg/L	100	<100	<100	0	<100						
cis-1,4-Dichloro-2-butene	µg/L	1	<1	<1	0	<1						
trans-1,4-Dichloro-2-butene	µg/L	1	<1	<1	0	<1						
Chlorinated Hydrocarbons												
1,1,1,2-tetrachloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1,1-trichloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1,2,2-tetrachloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1,2-trichloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1-dichloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1-dichloroethene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,1-dichloropropene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2,3-trichloropropane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2-dibromo-3-chloropropane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2-dichloroethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2-dichloropropane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,3-dichloropropane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
2,2-dichloropropane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Bromochloromethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Bromodichloromethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Bromoform	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Carbon tetrachloride	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Chlorodibromomethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Chloroethane	µg/L	5 : 10 (Interlab)	<5	<5	0	<5	<10	0				
Chloroform	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Chloromethane	µg/L	5 : 10 (Interlab)	<5	<5	0	<5	<10	0				
cis-1,2-dichloroethene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
cis-1,3-dichloropropene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Dibromomethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Dichloromethane	µg/L	4	<4	<4	0	<4						
Hexachlorobutadiene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Trichloroethene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Tetrachloroethene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
trans-1,2-dichloroethene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
trans-1,3-dichloropropene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Vinyl chloride	µg/L	0.3 : 10 (Interlab)	<0.3	<0.3	0	<0.3	<10	0				
Halogenated Hydrocarbons												
1,2-dibromoethane	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Bromomethane	µg/L	10	<10	<10	0	<10	<10	0				
Dichlorodifluoromethane	µg/L	5 : 10 (Interlab)	<5	<5	0	<5	<10	0				
Iodomethane	µg/L	5	<5	<5	0	<5						
Trichlorofluoromethane	µg/L	1 : 10 (Interlab)	<1	<1	0	<1	<10	0				
Halogenated Benzenes												
1,2,3-trichlorobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2,4-trichlorobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,2-dichlorobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,3-dichlorobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
1,4-dichlorobenzene	µg/L	0.3 : 1 (Interlab)	<0.3	<0.3	0	<0.3	<1	0				
2-chlorotoluene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
4-chlorotoluene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Bromobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Chlorobenzene	µg/L	0.5 : 1 (Interlab)	<0.5	<0.5	0	<0.5	<1	0				
Biological												
Faecal Coliforms	CFU/100m											
Solvents												
Methyl Ethyl Ketone	µg/L	10	<10	<10	0	<10						
2-hexanone (MBK)	µg/L	5	<5	<5	0	<5						
4-Methyl-2-pentanone	µg/L	5	<5	<5	0	<5						
Acetone	mg/l	0.01	<0.01	<0.01	0	<0.01						
Acrylonitrile	µg/L	0.5	<0.5	<0.5	0	<0.5						
Allyl chloride	mg/l	0.002	<0.002	<0.002	0	<0.002						
Carbon disulfide	µg/L	2	<2	<2	0	<2						
MTBE	mg/l	0.002	<0.002	<0.002	0	<0.002						
Vinyl acetate	µg/L	10	<10	<10	0	<10						

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 80 (1-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

APPENDIX I – Laboratory Certificates and CoCs

CHAIN OF CUSTODY

EnvironmentalStrategies
PROVIDING BENEFITS

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
Sampler: JO, GS, MD
Address: Suite 15201, 2 Locomotive Street
Eveleigh NSW 2065
Phone: (02) 9690 2555 **Mob:** 0434 657 155
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report)
accounts@environmentalstrategies.com.au (invoice)
natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required												Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (10)	TRH	BTEX	VOCs	PAHs	PCBs	TOC Combustion)	Lead	Asbestos	Fluoride	faecal coliforms	total coliforms	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
1	TRIPGS161115		16/11/2015	Sediment	X	X	X	X	X		X										1			2	
2	TRIPGS161115b		16/11/2015	Water	X	X	X	X	X									2	1	1	1	1		2	
3	TRIPGS181115		18/11/2015	soil								X	X	X										1	
4	TRIPJO181115		18/11/2015	Soil	X	X	X	X	X								X								
5.	TRIPJO161115		16·11·2015	soil																					
	Extra																								

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

Job No: 137753
Date Received: 20·11·15.
Time Received: 1545.
Received by: CB.
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by: Environmental Strategies		**Received & Reliquished by (SGS Muswellbrook or Courier):**	
Print Name:	Ryan Wells	**Print Name:** Chaovi Wang	
Date & Time:	20/11/2015	**Receipt Date & Time:**	**Relinquished Date & Time:**
Signature		**Signature**	
Received by (primary lab): SGS Sydney		**Received by (secondary lab): ELS**	
Print Name:		**Print Name:** CALUM BONSER.	
Date & Time:		**Date & Time:** 20·11·15 1545.	
Signature		**Signature** CB.	

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 11.6.
Transported by: Hand delievered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

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

Client Details	
Client	Environmental Strategies Pty Ltd
Attention	Ryan Wells, Natasha Pasley

Sample Login Details	
Your Reference	15107
Envirolab Reference	**137753**
Date Sample Received	20/11/2015
Date Instructions Received	20/11/2015
Date Results Expected to be Reported	**30/11/2015**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Sediment 1 Water 3 Soils
Turnaround Time Requested	Standard
Temperature on receipt (°C)	11.6
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples
Privileged & Confidential PH,NO2,NO3 and PO4-out of recommended holding time

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

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
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Sample Id	*VOCs in water*	*vTRH(C6-C10)/BTEXN in Water*	*svTRH (C10-C40) in Water*	*PAHs in Water - Trace Level*	*HM in water - dissolved*	*HM in water - total*	*VOCs in soil*	*vTRH(C6-C10)/BTEXN in Soil*	*svTRH (C10-C40) in Soil*	*PAHs in Soil - Low Level*	*Acid Extractable metals in soil*	*Total Fluoride*	*Total Organic Carbon (Combustion)*	*Asbestos ID - soils*	*On Hold*
TRIPGS161115							✓	✓	✓	✓	✓		✓		
TRIPGS161115b	✓	✓	✓	✓	✓	✓									
TRIPGS181115											✓	✓		✓	
TRIPJO181115							✓	✓	✓	✓	✓				
TRIPJO161115															✓

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 137753

Client:
Environmental Strategies Pty Ltd
Suite 15201, Locomotive Workshop
2 Locomotive St
Eveleigh
NSW 2015

Attention: Ryan Wells, Natasha Pasley

Sample log in details:

Your Reference:	**15107**
No. of samples:	1 Sediment 1 Water 3 Soils
Date samples received / completed instructions received	20/11/2015 / 20/11/2015

`*Privileged & Confidential*'

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:	30/11/15 / 3/12/15
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:

Jacinta Hurst
Laboratory Manager

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137753-2 TRIPGS161115b 16/11/2015 Water
Date extracted	-	24/11/2015
Date analysed	-	24/11/2015
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	 137753-2 TRIPGS161115b 16/11/2015 Water
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	98
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	98

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	137753-2
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		Water
Date extracted	-	24/11/2015
Date analysed	-	24/11/2015
TRHC$_6$ - C$_9$	µg/L	<10
TRHC$_6$ - C$_{10}$	µg/L	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	97
Surrogate 4-BFB	%	98

svTRH (C10-C40) in Water		
Our Reference:	UNITS	137753-2
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		Water
Date extracted	-	23/11/2015
Date analysed	-	24/11/2015
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH>C_{10} - C_{16}	µg/L	<50
TRH>C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH>C_{16} - C_{34}	µg/L	<100
TRH>C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	67

PAHs in Water - Trace Level		
Our Reference:	UNITS	137753-2
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		Water
Date extracted	-	23/11/2015
Date analysed	-	23/11/2015
Naphthalene	µg/L	<0.02
Acenaphthylene	µg/L	<0.01
Acenaphthene	µg/L	<0.01
Fluorene	µg/L	<0.01
Phenanthrene	µg/L	0.03
Anthracene	µg/L	<0.01
Fluoranthene	µg/L	<0.01
Pyrene	µg/L	<0.01
Benzo(a)anthracene	µg/L	<0.01
Chrysene	µg/L	<0.01
Benzo(b,j+k)fluoranthene	µg/L	<0.02
Benzo(a)pyrene	µg/L	<0.01
Dibenzo(a,h)anthracene	µg/L	<0.01
Indeno(1,2,3-c,d)pyrene	µg/L	<0.01
Benzo(g,h,i)perylene	µg/L	<0.01
Benzo(a)pyrene TEQ	µg/L	<0.05
Total +ve PAH's	µg/L	0.030
Surrogate p-Terphenyl-d14	%	69

HM in water - dissolved		
Our Reference:	UNITS	137753-2
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		Water
Date prepared	-	IS
Date analysed	-	IS
Arsenic-Dissolved	µg/L	IS
Boron-Dissolved	µg/L	IS
Cadmium-Dissolved	µg/L	IS
Chromium-Dissolved	µg/L	IS
Copper-Dissolved	µg/L	IS
Lead-Dissolved	µg/L	IS
Mercury-Dissolved	µg/L	IS
Nickel-Dissolved	µg/L	IS
Selenium-Dissolved	µg/L	IS
Zinc-Dissolved	µg/L	IS

HM in water - total		
Our Reference:	UNITS	137753-2
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		Water
Date prepared	-	IS
Date analysed	-	IS
Arsenic-Total	µg/L	IS
Boron-Total	µg/L	IS
Cadmium-Total	µg/L	IS
Chromium-Total	µg/L	IS
Copper-Total	µg/L	IS
Lead-Total	µg/L	IS
Mercury-Total	µg/L	IS
Nickel-Total	µg/L	IS
Selenium-Total	µg/L	IS
Zinc-Total	µg/L	IS

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137753-1 TRIPGS161115 16/11/2015 Sediment	137753-4 TRIPJO181115 18/11/2015 Soil
Date extracted	-	24/11/2015	24/11/2015
Date analysed	-	24/11/2015	24/11/2015
Dichlorodifluoromethane	mg/kg	<1	<1
Chloromethane	mg/kg	<1	<1
Vinyl Chloride	mg/kg	<1	<1
Bromomethane	mg/kg	<1	<1
Chloroethane	mg/kg	<1	<1
Trichlorofluoromethane	mg/kg	<1	<1
1,1-Dichloroethene	mg/kg	<1	<1
trans-1,2-dichloroethene	mg/kg	<1	<1
1,1-dichloroethane	mg/kg	<1	<1
cis-1,2-dichloroethene	mg/kg	<1	<1
bromochloromethane	mg/kg	<1	<1
chloroform	mg/kg	<1	<1
2,2-dichloropropane	mg/kg	<1	<1
1,2-dichloroethane	mg/kg	<1	<1
1,1,1-trichloroethane	mg/kg	<1	<1
1,1-dichloropropene	mg/kg	<1	<1
Cyclohexane	mg/kg	<1	<1
carbon tetrachloride	mg/kg	<1	<1
Benzene	mg/kg	<0.2	<0.2
dibromomethane	mg/kg	<1	<1
1,2-dichloropropane	mg/kg	<1	<1
trichloroethene	mg/kg	<1	<1
bromodichloromethane	mg/kg	<1	<1
trans-1,3-dichloropropene	mg/kg	<1	<1
cis-1,3-dichloropropene	mg/kg	<1	<1
1,1,2-trichloroethane	mg/kg	<1	<1
Toluene	mg/kg	<0.5	<0.5
1,3-dichloropropane	mg/kg	<1	<1
dibromochloromethane	mg/kg	<1	<1
1,2-dibromoethane	mg/kg	<1	<1
tetrachloroethene	mg/kg	<1	<1
1,1,1,2-tetrachloroethane	mg/kg	<1	<1
chlorobenzene	mg/kg	<1	<1
Ethylbenzene	mg/kg	<1	<1
bromoform	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
styrene	mg/kg	<1	<1
1,1,2,2-tetrachloroethane	mg/kg	<1	<1
o-Xylene	mg/kg	<1	<1
1,2,3-trichloropropane	mg/kg	<1	<1

VOCs in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137753-1 TRIPGS161115 16/11/2015 Sediment	137753-4 TRIPJO181115 18/11/2015 Soil
isopropylbenzene	mg/kg	<1	<1
bromobenzene	mg/kg	<1	<1
n-propyl benzene	mg/kg	<1	<1
2-chlorotoluene	mg/kg	<1	<1
4-chlorotoluene	mg/kg	<1	<1
1,3,5-trimethyl benzene	mg/kg	<1	<1
tert-butyl benzene	mg/kg	<1	<1
1,2,4-trimethyl benzene	mg/kg	<1	<1
1,3-dichlorobenzene	mg/kg	<1	<1
sec-butyl benzene	mg/kg	<1	<1
1,4-dichlorobenzene	mg/kg	<1	<1
4-isopropyl toluene	mg/kg	<1	<1
1,2-dichlorobenzene	mg/kg	<1	<1
n-butyl benzene	mg/kg	<1	<1
1,2-dibromo-3-chloropropane	mg/kg	<1	<1
1,2,4-trichlorobenzene	mg/kg	<1	<1
hexachlorobutadiene	mg/kg	<1	<1
1,2,3-trichlorobenzene	mg/kg	<1	<1
Surrogate Dibromofluorometha	%	101	101
Surrogate aaa-Trifluorotoluene	%	81	89
Surrogate Toluene-d_8	%	99	99
Surrogate 4-Bromofluorobenzene	%	94	94

vTRH(C6-C10)/BTEXN in Soil			
Our Reference:	UNITS	137753-1	137753-4
Your Reference	----------	TRIPGS161115	TRIPJO181115
Date Sampled	----------	16/11/2015	18/11/2015
Type of sample		Sediment	Soil
Date extracted	-	24/11/2015	24/11/2015
Date analysed	-	24/11/2015	24/11/2015
TRH C_6 - C_9	mg/kg	<25	<25
TRH C_6 - C_{10}	mg/kg	<25	<25
vTPH C_6 - C_{10} less BTEX (F1)	mg/kg	<25	<25
Benzene	mg/kg	<0.2	<0.2
Toluene	mg/kg	<0.5	<0.5
Ethylbenzene	mg/kg	<1	<1
m+p-xylene	mg/kg	<2	<2
o-Xylene	mg/kg	<1	<1
naphthalene	mg/kg	<1	<1
Surrogate aaa-Trifluorotoluene	%	81	89

svTRH (C10-C40) in Soil			
Our Reference:	UNITS	137753-1	137753-4
Your Reference	----------	TRIPGS161115	TRIPJO181115
Date Sampled	----------	16/11/2015	18/11/2015
Type of sample		Sediment	Soil
Date extracted	-	24/11/2015	24/11/2015
Date analysed	-	25/11/2015	25/11/2015
TRH C_{10} - C_{14}	mg/kg	<50	<50
TRH C_{15} - C_{28}	mg/kg	<100	<100
TRH C_{29} - C_{36}	mg/kg	<100	<100
TRH>C_{10}-C_{16}	mg/kg	<50	<50
TRH>C_{10} - C_{16} less Naphthalene (F2)	mg/kg	<50	<50
TRH>C_{16}-C_{34}	mg/kg	<100	<100
TRH>C_{34}-C_{40}	mg/kg	<100	<100
Surrogate o-Terphenyl	%	88	86

PAHs in Soil - Low Level Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137753-1 TRIPGS161115 16/11/2015 Sediment	137753-4 TRIPJO181115 18/11/2015 Soil
Date extracted	-	24/11/2015	24/11/2015
Date analysed	-	24/11/2015	24/11/2015
Naphthalene	mg/kg	<0.01	<0.01
Acenaphthylene	mg/kg	<0.01	<0.01
Acenaphthene	mg/kg	<0.01	<0.01
Fluorene	mg/kg	<0.01	<0.01
Phenanthrene	mg/kg	<0.01	<0.01
Anthracene	mg/kg	<0.01	<0.01
Fluoranthene	mg/kg	<0.01	<0.01
Pyrene	mg/kg	<0.01	<0.01
Benzo(a)anthracene	mg/kg	<0.01	<0.01
Chrysene	mg/kg	<0.01	<0.01
Benzo(b,j+k)fluoranthene	mg/kg	<0.02	<0.02
Benzo(a)pyrene	mg/kg	<0.01	<0.01
Indeno(1,2,3-c,d)pyrene	mg/kg	<0.01	<0.01
Dibenzo(a,h)anthracene	mg/kg	<0.01	<0.01
Benzo(g,h,i)perylene	mg/kg	<0.01	<0.01
Benzo(a)pyrene TEQ calc (zero)	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc(half)	mg/kg	<0.05	<0.05
Benzo(a)pyrene TEQ calc(PQL)	mg/kg	<0.05	<0.05
Total +ve PAH's	mg/kg	NIL (+)VE	NIL (+)VE
Surrogate p-Terphenyl-d14	%	104	103

Acid Extractable metals in soil Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137753-1 TRIPGS161115 16/11/2015 Sediment	137753-3 TRIPGS181115 18/11/2015 Soil	137753-4 TRIPJO181115 18/11/2015 Soil
Date prepared	-	24/11/2015	24/11/2015	24/11/2015
Date analysed	-	24/11/2015	24/11/2015	24/11/2015
Arsenic	mg/kg	9	[NA]	<4
Boron	mg/kg	<3	[NA]	<3
Cadmium	mg/kg	<0.4	[NA]	<0.4
Chromium	mg/kg	8	[NA]	5
Copper	mg/kg	3	[NA]	1
Lead	mg/kg	12	22	4
Mercury	mg/kg	<0.1	[NA]	<0.1
Nickel	mg/kg	1	[NA]	<1
Selenium	mg/kg	<2	[NA]	<2
Zinc	mg/kg	8	[NA]	3

Misc Inorg - Soil			
Our Reference:	UNITS	137753-1	137753-3
Your Reference	----------	TRIPGS161115	TRIPGS181115
Date Sampled	----------	16/11/2015	18/11/2015
Type of sample		Sediment	Soil
Date prepared	-	25/11/2015	25/11/2015
Date analysed	-	26/11/2015	26/11/2015
Total Fluoride	mg/kg	[NA]	<50
Total Organic Carbon (Combustion)	mg/kg	5,500	[NA]

Moisture				
Our Reference:	UNITS	137753-1	137753-3	137753-4
Your Reference	----------	TRIPGS161115	TRIPGS181115	TRIPJO181115
Date Sampled	----------	16/11/2015	18/11/2015	18/11/2015
Type of sample		Sediment	Soil	Soil
Date prepared	-	24/11/2015	24/11/2015	24/11/2015
Date analysed	-	25/11/2015	25/11/2015	25/11/2015
Moisture	%	29	23	19

Asbestos ID - soils		
Our Reference:	UNITS	137753-3
Your Reference	----------	TRIPGS181115
Date Sampled	----------	18/11/2015
Type of sample		Soil
Date analysed	-	25/11/2015
Sample mass tested	g	Approx. 35g
Sample Description	-	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Org-014	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013. For soil results:- 1. 'TEQ PQL' values are assuming all contributing PAHs reported as <PQL are actually at the PQL. This is the most conservative approach and can give false positive TEQs given that PAHs that contribute to the TEQ calculation may not be present. 2. 'TEQ zero' values are assuming all contributing PAHs reported as <PQL are zero. This is the least conservative approach and is more susceptible to false negative TEQs when PAHs that contribute to the TEQ calculation are present but below PQL. 3. 'TEQ half PQL' values are assuming all contributing PAHs reported as <PQL are half the stipulated PQL. Hence a mid-point between the most and least conservative approaches above. Note, the Total +ve PAHs PQL is reflective of the lowest individual PQL and is therefore" Total +ve PAHs" is simply a sum of the positive individual PAHs.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Inorg-026/53	Fluoride by caustic fusion and determined by ion selective electrode (ISE) analysis.
Ext-020	Analysis subcontracted to Australian Government - National Measurement Institute. NATA Accreditation No: 198
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	92%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	75%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	103%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	99%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	116%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	102%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	104%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	98%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	98	[NT]	[NT]	LCS-W1	104%
Surrogate toluene-d8	%		Org-013	97	[NT]	[NT]	LCS-W1	102%
Surrogate 4-BFB	%		Org-013	98	[NT]	[NT]	LCS-W1	104%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	96%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	97%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	98%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	102	[NT]	[NT]	LCS-W1	101%
Surrogate toluene-d8	%		Org-016	97	[NT]	[NT]	LCS-W1	102%
Surrogate 4-BFB	%		Org-016	98	[NT]	[NT]	LCS-W1	104%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/11/2015	[NT]	[NT]	LCS-W1	23/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	110%
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	95%
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	88%
TRH>C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	110%
TRH>C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	95%
TRH>C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	88%
Surrogate o-Terphenyl	%		Org-003	90	[NT]	[NT]	LCS-W1	119%

QUALITY CONTROL PAHs in Water - Trace Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			23/11/2015	[NT]	[NT]	LCS-W1	23/11/2015
Date analysed	-			23/11/2015	[NT]	[NT]	LCS-W1	23/11/2015
Naphthalene	µg/L	0.02	Org-012	<0.02	[NT]	[NT]	LCS-W1	83%
Acenaphthylene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	98%
Phenanthrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	92%
Anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	103%
Pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	108%

QUALITY CONTROL PAHs in Water - Trace Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	106%
Benzo(b,j+k) fluoranthene	µg/L	0.02	Org-012	<0.02	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	121%
Dibenzo(a,h)anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	100	[NT]	[NT]	LCS-W1	97%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank
Date prepared	-			INS
Date analysed	-			INS
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Boron-Dissolved	µg/L	5	Metals-022 ICP-MS	INS
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	INS
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	INS
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Selenium-Dissolved	µg/L	1	Metals-022 ICP-MS	INS
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	INS

QUALITY CONTROL HM in water - total	UNITS	PQL	METHOD	Blank
Date prepared	-			INS
Date analysed	-			INS
Arsenic-Total	µg/L	1	Metals-022 ICP-MS	INS
Boron-Total	µg/L	5	Metals-022 ICP-MS	INS
Cadmium-Total	µg/L	0.1	Metals-022 ICP-MS	INS
Chromium-Total	µg/L	1	Metals-022 ICP-MS	INS
Copper-Total	µg/L	1	Metals-022 ICP-MS	INS
Lead-Total	µg/L	1	Metals-022 ICP-MS	INS
Mercury-Total	µg/L	0.05	Metals-021 CV-AAS	INS
Nickel-Total	µg/L	1	Metals-022 ICP-MS	INS
Selenium-Total	µg/L	1	Metals-022 ICP-MS	INS
Zinc-Total	µg/L	1	Metals-022 ICP-MS	INS

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	137753-1	24/11/2015 || 24/11/2015	LCS-2	24/11/2015
Date analysed	-			24/11/2015	137753-1	24/11/2015 || 24/11/2015	LCS-2	24/11/2015
Dichlorodifluoromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Chloromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Vinyl Chloride	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Bromomethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Chloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Trichlorofluoromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,1-Dichloroethene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
trans-1,2-dichloroethene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,1-dichloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	87%
cis-1,2-dichloroethene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
bromochloromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
chloroform	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	81%
2,2-dichloropropane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2-dichloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	85%
1,1,1-trichloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	83%
1,1-dichloropropene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Cyclohexane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
carbon tetrachloride	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Benzene	mg/kg	0.2	Org-014	<0.2	137753-1	<0.2 || <0.2	[NR]	[NR]
dibromomethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2-dichloropropane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
trichloroethene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	72%
bromodichloromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	72%
trans-1,3-dichloropropene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Toluene	mg/kg	0.5	Org-014	<0.5	137753-1	<0.5 || <0.5	[NR]	[NR]
1,3-dichloropropane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
dibromochloromethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2-dibromoethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
tetrachloroethene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	LCS-2	77%
1,1,1,2-tetrachloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
chlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Ethylbenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
bromoform	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
m+p-xylene	mg/kg	2	Org-014	<2	137753-1	<2 || <2	[NR]	[NR]
styrene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
o-Xylene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2,3-trichloropropane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
isopropylbenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
bromobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
n-propyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
2-chlorotoluene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
4-chlorotoluene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
tert-butyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
sec-butyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
4-isopropyl toluene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
n-butyl benzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
hexachlorobutadiene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Surrogate Dibromofluorometha	%		Org-014	101	137753-1	101 || 101 || RPD: 0	LCS-2	100%
Surrogate aaa-Trifluorotoluene	%		Org-014	84	137753-1	81 || 83 || RPD: 2	LCS-2	80%
Surrogate Toluene-d_8	%		Org-014	99	137753-1	99 || 99 || RPD: 0	LCS-2	100%

QUALITY CONTROL VOCs in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Surrogate 4-Bromofluorobenzene	%		Org-014	92	137753-1	94 || 94 || RPD: 0	LCS-2	94%
QUALITY CONTROL vTRH(C6-C10)/BTEXN in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	137753-1	24/11/2015 || 24/11/2015	LCS-2	24/11/2015
Date analysed	-			24/11/2015	137753-1	24/11/2015 || 24/11/2015	LCS-2	24/11/2015
TRHC$_6$ - C$_9$	mg/kg	25	Org-016	<25	137753-1	<25 || <25	LCS-2	98%
TRHC$_6$ - C$_{10}$	mg/kg	25	Org-016	<25	137753-1	<25 || <25	LCS-2	98%
Benzene	mg/kg	0.2	Org-016	<0.2	137753-1	<0.2 || <0.2	LCS-2	99%
Toluene	mg/kg	0.5	Org-016	<0.5	137753-1	<0.5 || <0.5	LCS-2	99%
Ethylbenzene	mg/kg	1	Org-016	<1	137753-1	<1 || <1	LCS-2	96%
m+p-xylene	mg/kg	2	Org-016	<2	137753-1	<2 || <2	LCS-2	97%
o-Xylene	mg/kg	1	Org-016	<1	137753-1	<1 || <1	LCS-2	98%
naphthalene	mg/kg	1	Org-014	<1	137753-1	<1 || <1	[NR]	[NR]
Surrogate aaa-Trifluorotoluene	%		Org-016	84	137753-1	81 || 83 || RPD: 2	LCS-2	80%
QUALITY CONTROL svTRH (C10-C40) in Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-4	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-4	24/11/2015
TRHC$_{10}$ - C$_{14}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	118%
TRHC$_{15}$ - C$_{28}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	98%
TRHC$_{29}$ - C$_{36}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	80%
TRH>C$_{10}$-C$_{16}$	mg/kg	50	Org-003	<50	[NT]	[NT]	LCS-4	118%
TRH>C$_{16}$-C$_{34}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	98%
TRH>C$_{34}$-C$_{40}$	mg/kg	100	Org-003	<100	[NT]	[NT]	LCS-4	80%
Surrogate o-Terphenyl	%		Org-003	94	[NT]	[NT]	LCS-4	128%
QUALITY CONTROL PAHs in Soil - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-4	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-4	24/11/2015
Naphthalene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	112%
Acenaphthylene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Acenaphthene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluorene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	117%
Phenanthrene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	92%
Anthracene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluoranthene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	115%

QUALITY CONTROL PAHs in Soil - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Pyrene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	120%
Benzo(a)anthracene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Chrysene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	87%
Benzo(b,j+k) fluoranthene	mg/kg	0.02	Org-012	<0.02	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	LCS-4	129%
Indeno(1,2,3-c,d)pyrene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	mg/kg	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	100	[NT]	[NT]	LCS-4	98%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			24/11/2015	[NT]	[NT]	LCS-3	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-3	24/11/2015
Arsenic	mg/kg	4	Metals-020 ICP-AES	<4	[NT]	[NT]	LCS-3	118%
Boron	mg/kg	3	Metals-020 ICP-AES	<3	[NT]	[NT]	LCS-3	109%
Cadmium	mg/kg	0.4	Metals-020 ICP-AES	<0.4	[NT]	[NT]	LCS-3	110%
Chromium	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	113%
Copper	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	112%
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	111%
Mercury	mg/kg	0.1	Metals-021 CV-AAS	<0.1	[NT]	[NT]	LCS-3	100%
Nickel	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	108%
Selenium	mg/kg	2	Metals-020 ICP-AES	<2	[NT]	[NT]	LCS-3	110%
Zinc	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-3	110%

Client Reference: 15107

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			25/11/2015	[NT]	[NT]	LCS-1	25/11/2015
Date analysed	-			26/11/2015	[NT]	[NT]	LCS-1	26/11/2015
Total Fluoride	mg/kg	50	Inorg-026/53	<50	[NT]	[NT]	LCS-1	75%
Total Organic Carbon (Combustion)	mg/kg	200	Ext-020	<200	[NT]	[NT]	LCS-1	110%

Report Comments:

VOC's in water: subsampled from amber.

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Sample 137753-3 were sub-sampled from a jar provided by the client.\

TOC analysed by NMI. Report No.RN1093330.

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

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

CHAIN OF CUSTODY

Environmental
PROVIDING BENEFITS

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
Sampler: JO, GS, MD
Address: Suite 15201, 2 Locomotive Street
Eveleigh NSW 2065

Phone: (02) 9690 2555 **Mob:** 0434 657 155
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report)
accounts@environmentalstrategies.com.au (invoice)
natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number: 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (10)	TRH	BTEX	VOCs	PAHs	PCBs	TOC Combustion)	Lead	Asbestos	Fluoride	faecal coliforms	total coliforms	OCP/OPP	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Comments: Provide as much information about the sample as you can
	T_2_SG01		17/11/2015	Soil								X	X	X											2	
	T_2_SG02		17/11/2015	Soil								X	X	X											2	
	T_2_SG03		17/11/2015	Soil								X	X	X											2	
	T_2_SG04		17/11/2015	Soil								X	X	X											2	
	T_2_SG05		19/11/2015	Soil								X	x	x											2	
	T_SG01		18/11/2015	soil								X	x	x											2	
	T_SG02		18/11/2015	soil								X	x	x											2	
	T_SG03		18/11/2015	soil								X	x	x											2	
	T_SG04		18/11/2015	soil								X	x	x											2	
	T_SG05		18/11/2015	soil								X	x	x											2	
	T_SG06		18/11/2015	soil								X	x	x											2	
	T_SG07		18/11/2015	soil								X	x	x											2	
	T_SG08		19/11/2015	Soil								X	x	x											2	
	T_SG09		19/11/2015	Soil								X	x	x											2	
	T_SG10		19/11/2015	Soil								X	x	x											2	
	DUPGS161115b		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
	T_6_SW01		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
	T_SW02		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
	Trip Blank			water			X																		1	
	Trip Spike			Water			X												1							
	Trip Blank			Soil			X																		1	
	Trip Spike			Soil			X												1							
	T_ESSB08	0.1	18/11/2015	Soil	X	X	X	X	X				X	X			X								1	
	T_ESSB08	0.5	18/11/2015	Soil														X							1	
	T_ESSB08	1	18/11/2015	Soil	X	X	X		X					X			X								1	
	T_ESSB08	2	18/11/2015	Soil														X							1	
	DUPJO161115			Soil														X							1	
1	TRIPGS161115b		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			Please send to Envirolab
2	TRIPGS181115		18/11/2015	soil								X	X	X											2	Please send to Envirolab

Envirolab Services
12 Ashley St
Chatswood NSW 2067
Ph: (02) 9910 6200
Job No: 137909.
Date Received: 24/11/15
Time Received: 16:00
Received by:
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 20/11/2015
Signature

Received by (primary lab): SGS Sydney
Print Name:
Date & Time:
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature

Received by (secondary lab): ELS
Print Name: Kevin Wey
Date & Time: 24/11/15 16:00
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable)
Transported by: Hand delievered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

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

Client Details	
Client	Environmental Strategies Pty Ltd
Attention	Ryan Wells, Natasha Pasley

Sample Login Details	
Your Reference	15107
Envirolab Reference	**137909**
Date Sample Received	24/11/2015
Date Instructions Received	24/11/2015
Date Results Expected to be Reported	**01/12/2015**

Sample Condition	
Samples received in appropriate condition for analysis	YES
No. of Samples Provided	1 Soil 1 Water
Turnaround Time Requested	Standard
Temperature on receipt (°C)	17.2
Cooling Method	Ice
Sampling Date Provided	YES

Comments
Samples will be held for 1 month for water samples and 2 months for soil samples from date of receipt of samples
Privileged & Confidential

Please direct any queries to:

Aileen Hie	Jacinta Hurst
Phone: 02 9910 6200	Phone: 02 9910 6200
Fax: 02 9910 6201	Fax: 02 9910 6201
Email: ahie@envirolabservices.com.au	Email: jhurst@envirolabservices.com.au

Sample and Testing Details on following page

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 Id	*VOCs in water*	*vTRH(C6-C10)/BTEXN in Water*	*svTRH (C10-C40) in Water*	*PAHs in Water - Trace Level*	*HM in water - dissolved*	*HM in water - total*	*Acid Extractable metals in soil*	*Total Fluoride*	*Asbestos ID - soils*
TRIPGS161115b	✓	✓	✓	✓	✓	✓			
TRIPGS181115							✓	✓	✓

12 Ashley Street, Chatswood, NSW 2067
tel: +61 2 9910 6200

email: sydney@envirolab.com.au
envirolab.com.au

Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 137909

Client:
Environmental Strategies Pty Ltd
Suite 15201, Locomotive Workshop
2 Locomotive St
Eveleigh
NSW 2015

Attention: Ryan Wells, Natasha Pasley

Sample log in details:

Your Reference:	**15107**		
No. of samples:	1 Soil 1 Water		
Date samples received / completed instructions received	24/11/15	/	24/11/15

`*Privileged & Confidential*'

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:	1/12/15	/	1/12/15
Date of Preliminary Report:	Not Issued		

NATA accreditation number 2901. This document shall not be reproduced except in full.
Accredited for compliance with ISO/IEC 17025. **Tests not covered by NATA are denoted with *.**

Results Approved By:

Jacinta Hurst
Laboratory Manager

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137909-1 TRIPGS161115b 16/11/2015 water
Date extracted	-	24/11/2015
Date analysed	-	24/11/2015
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- ----------	137909-1 TRIPGS161115b 16/11/2015 water
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	98
Surrogate 4-BFB	%	96

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	137909-1
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		water
Date extracted	-	24/11/2015
Date analysed	-	24/11/2015
TRHC$_6$ - C$_9$	µg/L	<10
TRHC$_6$ - C$_{10}$	µg/L	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	102
Surrogate toluene-d8	%	98
Surrogate 4-BFB	%	96

svTRH (C10-C40) in Water		
Our Reference:	UNITS	137909-1
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		water
Date extracted	-	25/11/2015
Date analysed	-	27/11/2015
TRH C_{10} - C_{14}	µg/L	<50
TRH C_{15} - C_{28}	µg/L	<100
TRH C_{29} - C_{36}	µg/L	<100
TRH>C_{10} - C_{16}	µg/L	<50
TRH>C_{10} - C_{16} less Naphthalene (F2)	µg/L	<50
TRH>C_{16} - C_{34}	µg/L	<100
TRH>C_{34} - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	78

PAHs in Water - Trace Level		
Our Reference:	UNITS	137909-1
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		water
Date extracted	-	26/11/2015
Date analysed	-	26/11/2015
Naphthalene	µg/L	<0.02
Acenaphthylene	µg/L	<0.01
Acenaphthene	µg/L	<0.01
Fluorene	µg/L	<0.01
Phenanthrene	µg/L	0.03
Anthracene	µg/L	<0.01
Fluoranthene	µg/L	<0.01
Pyrene	µg/L	<0.01
Benzo(a)anthracene	µg/L	<0.01
Chrysene	µg/L	<0.01
Benzo(b,j+k)fluoranthene	µg/L	<0.02
Benzo(a)pyrene	µg/L	<0.01
Dibenzo(a,h)anthracene	µg/L	<0.01
Indeno(1,2,3-c,d)pyrene	µg/L	<0.01
Benzo(g,h,i)perylene	µg/L	<0.01
Benzo(a)pyrene TEQ	µg/L	<0.05
Total +ve PAH's	µg/L	0.030
Surrogate p-Terphenyl-d14	%	67

HM in water - dissolved		
Our Reference:	UNITS	137909-1
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		water
Date prepared	-	25/11/2015
Date analysed	-	25/11/2015
Arsenic-Dissolved	µg/L	1
Boron-Dissolved	µg/L	32
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	3
Copper-Dissolved	µg/L	6
Lead-Dissolved	µg/L	2
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	2
Selenium-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	40

HM in water - total		
Our Reference:	UNITS	137909-1
Your Reference	----------	TRIPGS161115b
Date Sampled	----------	16/11/2015
Type of sample		water
Date prepared	-	25/11/2015
Date analysed	-	25/11/2015
Arsenic-Total	µg/L	2
Boron-Total	µg/L	32
Cadmium-Total	µg/L	<0.1
Chromium-Total	µg/L	5
Copper-Total	µg/L	4
Lead-Total	µg/L	5
Mercury-Total	µg/L	0.06
Nickel-Total	µg/L	3
Selenium-Total	µg/L	<1
Zinc-Total	µg/L	52

Acid Extractable metals in soil		
Our Reference:	UNITS	137909-2
Your Reference	----------	TRIPGS181115
Date Sampled	----------	18/11/2015
Type of sample		soil
Date prepared	-	25/11/2015
Date analysed	-	25/11/2015
Lead	mg/kg	16

Misc Inorg - Soil		
Our Reference:	UNITS	137909-2
Your Reference	----------	TRIPGS181115
Date Sampled	----------	18/11/2015
Type of sample		soil
Date prepared	-	25/11/2015
Date analysed	-	26/11/2016
Total Fluoride	mg/kg	<50

Moisture		
Our Reference:	UNITS	137909-2
Your Reference	----------	TRIPGS181115
Date Sampled	----------	18/11/2015
Type of sample		soil
Date prepared	-	25/11/2015
Date analysed	-	26/11/2015
Moisture	%	19

Asbestos ID - soils		
Our Reference:	UNITS	137909-2
Your Reference	----------	TRIPGS181115
Date Sampled	----------	18/11/2015
Type of sample		soil
Date analysed	-	1/12/2015
Sample mass tested	g	Approx. 35g
Sample Description	-	Brown coarse grain soil & rocks
Asbestos ID in soil	-	No asbestos detected at reporting limit of 0.1g/kg Organic fibres detected
Trace Analysis	-	No asbestos detected

Method ID	Methodology Summary
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Metals-022 ICP-MS	Determination of various metals by ICP-MS.
Metals-021 CV-AAS	Determination of Mercury by Cold Vapour AAS.
Metals-020 ICP-AES	Determination of various metals by ICP-AES.
Inorg-026/53	Fluoride by caustic fusion and determined by ion selective electrode (ISE) analysis.
Inorg-008	Moisture content determined by heating at 105+/-5 deg C for a minimum of 12 hours.
ASB-001	Asbestos ID - Qualitative identification of asbestos in bulk samples using Polarised Light Microscopy and Dispersion Staining Techniques including Synthetic Mineral Fibre and Organic Fibre as per Australian Standard 4964-2004.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	92%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	75%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	103%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	99%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	116%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	102%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	104%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	98%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

Client Reference: 15107

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	98	[NT]	[NT]	LCS-W1	104%
Surrogate toluene-d8	%		Org-013	97	[NT]	[NT]	LCS-W1	102%
Surrogate 4-BFB	%		Org-013	98	[NT]	[NT]	LCS-W1	104%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
Date analysed	-			24/11/2015	[NT]	[NT]	LCS-W1	24/11/2015
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	98%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	96%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	97%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	98%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	102	[NT]	[NT]	LCS-W1	101%
Surrogate toluene-d8	%		Org-016	97	[NT]	[NT]	LCS-W1	102%
Surrogate 4-BFB	%		Org-016	98	[NT]	[NT]	LCS-W1	104%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/11/2015	[NT]	[NT]	LCS-W1	26/11/2015
Date analysed	-			26/11/2015	[NT]	[NT]	LCS-W1	26/11/2015
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	90%
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	77%
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	97%
TRH>C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W1	90%
TRH>C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	77%
TRH>C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W1	97%
Surrogate o-Terphenyl	%		Org-003	89	[NT]	[NT]	LCS-W1	88%

QUALITY CONTROL PAHs in Water - Trace Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			26/11/2015	[NT]	[NT]	LCS-W1	26/11/2015
Date analysed	-			26/11/2015	[NT]	[NT]	LCS-W1	26/11/2015
Naphthalene	µg/L	0.02	Org-012	<0.02	[NT]	[NT]	LCS-W1	70%
Acenaphthylene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	91%
Phenanthrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	83%
Anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	92%
Pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	93%

QUALITY CONTROL PAHs in Water - Trace Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	94%
Benzo(b,j+k) fluoranthene	µg/L	0.02	Org-012	<0.02	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	LCS-W1	115%
Dibenzo(a,h)anthracene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Indeno(1,2,3-c,d)pyrene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	0.01	Org-012	<0.01	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	70	[NT]	[NT]	LCS-W1	84%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			25/11/2015	[NT]	[NT]	LCS-W1	25/11/2015
Date analysed	-			25/11/2015	[NT]	[NT]	LCS-W1	25/11/2015
Arsenic-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	98%
Boron-Dissolved	µg/L	5	Metals-022 ICP-MS	<5	[NT]	[NT]	LCS-W1	97%
Cadmium-Dissolved	µg/L	0.1	Metals-022 ICP-MS	<0.1	[NT]	[NT]	LCS-W1	99%
Chromium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	95%
Copper-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	97%
Lead-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	94%
Mercury-Dissolved	µg/L	0.05	Metals-021 CV-AAS	<0.05	[NT]	[NT]	LCS-W1	88%
Nickel-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	98%
Selenium-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	96%
Zinc-Dissolved	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	98%

QUALITY CONTROL HM in water - total	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			25/11/2015	[NT]	[NT]	LCS-W1	25/11/2015
Date analysed	-			25/11/2015	[NT]	[NT]	LCS-W1	25/11/2015
Arsenic-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	94%
Boron-Total	µg/L	5	Metals-022 ICP-MS	<5	[NT]	[NT]	LCS-W1	97%
Cadmium-Total	µg/L	0.1	Metals-022 ICP-MS	<0.1	[NT]	[NT]	LCS-W1	99%
Chromium-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	92%
Copper-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	96%
Lead-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	98%
Mercury-Total	µg/L	0.05	Metals-021 CV-AAS	<0.05	[NT]	[NT]	LCS-W1	88%
Nickel-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	94%
Selenium-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	101%
Zinc-Total	µg/L	1	Metals-022 ICP-MS	<1	[NT]	[NT]	LCS-W1	104%

QUALITY CONTROL Acid Extractable metals in soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			25/11/2015	[NT]	[NT]	LCS-13	25/11/2015
Date analysed	-			25/11/2015	[NT]	[NT]	LCS-13	25/11/2015
Lead	mg/kg	1	Metals-020 ICP-AES	<1	[NT]	[NT]	LCS-13	98%

QUALITY CONTROL Misc Inorg - Soil	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			25/11/2015	[NT]	[NT]	LCS-1	25/11/2015
Date analysed	-			26/11/2015	[NT]	[NT]	LCS-1	26/11/2015
Total Fluoride	mg/kg	50	Inorg-026/53	<50	[NT]	[NT]	LCS-1	75%

Report Comments:

Asbestos: A portion of the supplied sample was sub-sampled for asbestos analysis according to Envirolab procedures. We cannot guarantee that this sub-sample is indicative of the entire sample. Envirolab recommends supplying 40-50g of sample in its own container.
Note: Samples 137909-2 were sub-sampled from jars provided by the client.

In theory the total metal content should be higher than the dissolved metal content. However, in some samples this is not the case. The sample has been re-analysed for both Total and Dissolved and results have been confirmed.

Asbestos ID was analysed by Approved Identifier: Lulu Scott
Asbestos ID was authorised by Approved Signatory: Lulu Scott

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

Duplicate sample and matrix spike recoveries may not be reported on smaller jobs, however, were analysed at a frequency to meet or exceed NEPM requirements. All samples are tested in batches of 20. The duplicate sample RPD and matrix spike recoveries for the batch were within the laboratory acceptance criteria.
Filters, swabs, wipes, tubes and badges will not have duplicate data as the whole sample is generally extracted during sample extraction.
Spikes for Physical and Aggregate Tests are not applicable.
For VOCs in water samples, three vials are required for duplicate or spike analysis.

Duplicates: <5xPQL - any RPD is acceptable; >5xPQL - 0-50% RPD is acceptable.
Matrix Spikes, LCS and Surrogate recoveries: Generally 70-130% for inorganics/metals; 60-140% for organics (+/-50% surrogates) and 10-140% for labile SVOCs (including labile surrogates), ultra trace organics and speciated phenols is acceptable.

In circumstances where no duplicate and/or sample spike has been reported at 1 in 10 and/or 1 in 20 samples respectively, the sample volume submitted was insufficient in order to satisfy laboratory QA/QC protocols.

When samples are received where certain analytes are outside of recommended technical holding times (THTs), the analysis has proceeded. Where analytes are on the verge of breaching THTs, every effort will be made to analyse within the THT or as soon as practicable.

Where sampling dates are not provided, Envirolab are not in a position to comment on the validity of the analysis where recommended technical holding times may have been breached.

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
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Facsimile	(Not specified)
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Project	**15107**
Order Number	(Not specified)
Samples	29

LABORATORY DETAILS

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SGS Reference	**SE145989 R0**
Date Received	13/11/2015
Date Reported	23/11/2015

COMMENTS

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

No respirable fibres detected in all samples using trace analysis technique.

Samples #1, 3, 5, 7, 9, 11, 14-20 were ashed after initial stereo microscope examination, re-examined and trace analysis performed on samples where asbestos has not been detected.
No trace asbestos fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

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SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst/Hygiene Team Leader

VOC's in Soil [AN433/AN434] Tested: 16/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	-	-
Chloromethane	mg/kg	1	<1	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	-	-
Bromomethane	mg/kg	1	<1	-	-	-	-
Chloroethane	mg/kg	1	<1	-	-	-	-
Trichlorofluoromethane	mg/kg	1	<1	-	-	-	-
Acetone (2-propanone)	mg/kg	10	<10	-	-	-	-
Iodomethane	mg/kg	5	<5	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
Acrylonitrile	mg/kg	0.1	<0.1	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	-	-
Allyl chloride	mg/kg	0.1	<0.1	-	-	-	-
Carbon disulfide	mg/kg	0.5	<0.5	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	-	-
Vinyl acetate	mg/kg	10	<10	-	-	-	-
MEK (2-butanone)	mg/kg	10	<10	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	-	-
Bromochloromethane	mg/kg	0.1	<0.1	-	-	-	-
Chloroform	mg/kg	0.1	<0.1	-	-	-	-
2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	-	-
Dibromomethane	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-	-	-	-
2-nitropropane	mg/kg	10	<10	-	-	-	-
Bromodichloromethane	mg/kg	0.1	<0.1	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	<0.1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	<5	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	-
Chlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
Bromoform	mg/kg	0.1	<0.1	-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	<0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	<0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	<0.1	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	**0.9**	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	<1	<1	-
Chloromethane	mg/kg	1	-	-	<1	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	<0.1	<0.1	-
Bromomethane	mg/kg	1	-	-	<1	<1	-
Chloroethane	mg/kg	1	-	-	<1	<1	-
Trichlorofluoromethane	mg/kg	1	-	-	<1	<1	-
Acetone (2-propanone)	mg/kg	10	-	-	<10	<10	-
Iodomethane	mg/kg	5	-	-	<5	<5	-
1,1-dichloroethene	mg/kg	0.1	-	-	<0.1	<0.1	-
Acrylonitrile	mg/kg	0.1	-	-	<0.1	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	<0.5	<0.5	-
Allyl chloride	mg/kg	0.1	-	-	<0.1	<0.1	-
Carbon disulfide	mg/kg	0.5	-	-	<0.5	<0.5	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	<0.1	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1-dichloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
Vinyl acetate	mg/kg	10	-	-	<10	<10	-
MEK (2-butanone)	mg/kg	10	-	-	<10	<10	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	<0.1	-
Bromochloromethane	mg/kg	0.1	-	-	<0.1	<0.1	-
Chloroform	mg/kg	0.1	-	-	<0.1	<0.1	-
2,2-dichloropropane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2-dichloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1-dichloropropene	mg/kg	0.1	-	-	<0.1	<0.1	-
Carbon tetrachloride	mg/kg	0.1	-	-	<0.1	<0.1	-
Dibromomethane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2-dichloropropane	mg/kg	0.1	-	-	<0.1	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	<0.1	<0.1	-
2-nitropropane	mg/kg	10	-	-	<10	<10	-
Bromodichloromethane	mg/kg	0.1	-	-	<0.1	<0.1	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	<1	<1	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,3-dichloropropane	mg/kg	0.1	-	-	<0.1	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	-	<0.1	<0.1	-
2-hexanone (MBK)	mg/kg	5	-	-	<5	<5	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	<0.1	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
Chlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
Bromoform	mg/kg	0.1	-	-	<0.1	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	<1	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	<0.1	<0.1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	<0.1	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	<1	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	<0.1	<0.1	-
Bromobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
n-propylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	-	<0.1	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
n-butylbenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	-	-	<0.1	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	<0.1	<0.1	-
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	-	<1	<1
Chloromethane	mg/kg	1	<1	-	-	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Bromomethane	mg/kg	1	<1	-	-	<1	<1
Chloroethane	mg/kg	1	<1	-	-	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	-	-	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	-	-	<10	<10
Iodomethane	mg/kg	5	<5	-	-	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	-	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	-	-	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Vinyl acetate	mg/kg	10	<10	-	-	<10	<10
MEK (2-butanone)	mg/kg	10	<10	-	-	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Chloroform	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	-	-	<10	<10
Bromodichloromethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	-	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Chlorodibromomethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	-	-	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Bromoform	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	<1	<1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	-	<1	<1

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
n-propylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	-	<0.1	<0.1
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	<1	<1
Chloromethane	mg/kg	1	<1	<1	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1	<1	<1	<1	<1	<1
Chloroethane	mg/kg	1	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	<10	<10
Iodomethane	mg/kg	5	<5	<5	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl acetate	mg/kg	10	<10	<10	<10	<10	<10
MEK (2-butanone)	mg/kg	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	<10	<10	<10	<10
Bromodichloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorodibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromoform	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	Tripspike SOIL - 10/11/2015 SE145989.021	Tripblank SOIL - 10/11/2015 SE145989.022	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025
Benzene	mg/kg	0.1	[79%]	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	[86%]	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	[78%]	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	[84%]	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	[81%]	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	-	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	-	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	-	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	<1	-	<1
Chloromethane	mg/kg	1	-	-	<1	-	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	<0.1	-	<0.1
Bromomethane	mg/kg	1	-	-	<1	-	<1
Chloroethane	mg/kg	1	-	-	<1	-	<1
Trichlorofluoromethane	mg/kg	1	-	-	<1	-	<1
Acetone (2-propanone)	mg/kg	10	-	-	<10	-	<10
Iodomethane	mg/kg	5	-	-	<5	-	<5
1,1-dichloroethene	mg/kg	0.1	-	-	<0.1	-	<0.1
Acrylonitrile	mg/kg	0.1	-	-	<0.1	-	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	<0.5	-	<0.5
Allyl chloride	mg/kg	0.1	-	-	<0.1	-	<0.1
Carbon disulfide	mg/kg	0.5	-	-	<0.5	-	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	-	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1-dichloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
Vinyl acetate	mg/kg	10	-	-	<10	-	<10
MEK (2-butanone)	mg/kg	10	-	-	<10	-	<10
cis-1,2-dichloroethene	mg/kg	0.1	-	-	<0.1	-	<0.1
Bromochloromethane	mg/kg	0.1	-	-	<0.1	-	<0.1
Chloroform	mg/kg	0.1	-	-	<0.1	-	<0.1
2,2-dichloropropane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2-dichloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1,1-trichloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1-dichloropropene	mg/kg	0.1	-	-	<0.1	-	<0.1
Carbon tetrachloride	mg/kg	0.1	-	-	<0.1	-	<0.1
Dibromomethane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2-dichloropropane	mg/kg	0.1	-	-	<0.1	-	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	<0.1	-	<0.1
2-nitropropane	mg/kg	10	-	-	<10	-	<10
Bromodichloromethane	mg/kg	0.1	-	-	<0.1	-	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	<1	-	<1
cis-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	-	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1,2-trichloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,3-dichloropropane	mg/kg	0.1	-	-	<0.1	-	<0.1
Chlorodibromomethane	mg/kg	0.1	-	-	<0.1	-	<0.1
2-hexanone (MBK)	mg/kg	5	-	-	<5	-	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	<0.1	-	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
Chlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
Bromoform	mg/kg	0.1	-	-	<0.1	-	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	-	<1
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	<0.1	-	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2,3-trichloropropane	mg/kg	0.1	-	-	<0.1	-	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	<1	-	<1

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	Tripspike SOIL - 10/11/2015 SE145989.021	Tripblank SOIL - 10/11/2015 SE145989.022	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	<0.1	-	<0.1
Bromobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
n-propylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
2-chlorotoluene	mg/kg	0.1	-	-	<0.1	-	<0.1
4-chlorotoluene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
tert-butylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
sec-butylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,3-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,4-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
p-isopropyltoluene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2-dichlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
n-butylbenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
Hexachlorobutadiene	mg/kg	0.1	-	-	<0.1	-	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	<0.1	-	<0.1
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	-
Chloromethane	mg/kg	1	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	-
Bromomethane	mg/kg	1	-	-	-	-
Chloroethane	mg/kg	1	-	-	-	-
Trichlorofluoromethane	mg/kg	1	-	-	-	-
Acetone (2-propanone)	mg/kg	10	-	-	-	-
Iodomethane	mg/kg	5	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	-
Acrylonitrile	mg/kg	0.1	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	-
Allyl chloride	mg/kg	0.1	-	-	-	-
Carbon disulfide	mg/kg	0.5	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	-
Vinyl acetate	mg/kg	10	-	-	-	-
MEK (2-butanone)	mg/kg	10	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	-
Bromochloromethane	mg/kg	0.1	-	-	-	-
Chloroform	mg/kg	0.1	-	-	-	-
2,2-dichloropropane	mg/kg	0.1	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	-
Dibromomethane	mg/kg	0.1	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-
Bromodichloromethane	mg/kg	0.1	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	-
Chlorodibromomethane	mg/kg	0.1	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
Chlorobenzene	mg/kg	0.1	-	-	-	-
Bromoform	mg/kg	0.1	-	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-
n-propylbenzene	mg/kg	0.1	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-

Volatile Petroleum Hydrocarbons in Soil [AN433/AN434/AN410] Tested: 16/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 16/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	**460**
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	**320**
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	**720**
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	**780**
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	**780**

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
TRH C10-C14	mg/kg	20	<20	<200↑	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	**5100**	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	**2900**	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<1000↑	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<250↑	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<250↑	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	**7400**	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<1200↑	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	**8100**	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	**8500**	<210	<210	<210

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
TRH C10-C14	mg/kg	20	<20	<20	<20	43	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	250	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	89	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	60	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	60	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	310	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	380	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	380	<210

PARAMETER	UOM	LOR	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 16/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.3
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	2.4
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	1.0
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	1.0
Phenanthrene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	33
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	4.7
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0.4	<0.1	63
Pyrene	mg/kg	0.1	<0.1	<0.1	0.4	<0.1	49
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	33
Chrysene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	14
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.2	<0.1	36
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	5.4
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0.1	<0.1	21
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	8.5
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	0.5
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	8.4
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	30
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	30
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.2	<0.2	30
Total PAH	mg/kg	0.8	<0.8	<0.8	1.7	<0.8	280

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
Naphthalene	mg/kg	0.1	<0.1	6.4	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	4.3	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	4.4	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	11	0.2	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	14	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	40	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	0.3	510	1.2	0.4	0.2
Anthracene	mg/kg	0.1	<0.1	67	0.4	0.1	<0.1
Fluoranthene	mg/kg	0.1	0.7	700	1.9	1.5	0.5
Pyrene	mg/kg	0.1	0.6	600	1.7	1.3	0.4
Benzo(a)anthracene	mg/kg	0.1	0.3	190	0.8	0.7	0.2
Chrysene	mg/kg	0.1	0.3	160	0.5	0.5	0.2
Benzo(b&j)fluoranthene	mg/kg	0.1	0.3	330	0.9	0.8	0.2
Benzo(k)fluoranthene	mg/kg	0.1	0.2	89	0.3	0.2	<0.1
Benzo(a)pyrene	mg/kg	0.1	0.3	250	0.7	0.5	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	0.1	97	0.2	0.2	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	11	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	0.1	100	0.2	0.2	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	0.4	330	0.9	0.7	0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.5	330	1.0	0.8	0.4
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.4	330	1.0	0.8	0.3
Total PAH	mg/kg	0.8	3.3	3200	9.3	6.5	2.3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	1.1	0.2
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	0.3	1.0	0.3
Pyrene	mg/kg	0.1	<0.1	<0.1	0.3	0.9	0.3
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	0.2	0.8	0.3
Chrysene	mg/kg	0.1	<0.1	<0.1	0.2	0.5	0.2
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.2	0.8	0.4
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	0.1	0.2	0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	0.2	0.5	0.2
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	0.2	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	0.2	0.7	0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	0.3	0.8	0.4
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	0.3	0.7	0.3
Total PAH	mg/kg	0.8	<0.8	<0.8	1.8	6.6	2.3

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.3**	**0.1**	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.3**	**0.1**	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.1**	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH	mg/kg	0.8	**1.2**	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH	mg/kg	0.8	<0.8	<0.8

PCBs in Soil [AN400/AN420] Tested: 16/11/2015

PARAMETER	UOM	LOR	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PCBs in Soil [AN400/AN420] Tested: 16/11/2015 (continued)

PARAMETER	UOM	LOR	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1	<1

PARAMETER	UOM	LOR	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1

Total Recoverable Metals in Soil by ICPOES [AN040/AN320] Tested: 18/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
Arsenic, As	mg/kg	3	5	7	4	4	3
Cadmium, Cd	mg/kg	0.3	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	30	13	8.0	8.2	7.9
Copper, Cu	mg/kg	0.5	0.7	<0.5	1.8	0.7	12
Lead, Pb	mg/kg	1	17	9	14	9	19
Nickel, Ni	mg/kg	0.5	1.0	<0.5	0.8	0.7	5.9
Zinc, Zn	mg/kg	0.5	4.7	2.5	9.6	4.0	56

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
Arsenic, As	mg/kg	3	<3	4	<3	3	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	4.1	11	7.2	6.5	12
Copper, Cu	mg/kg	0.5	4.2	9.2	<0.5	12	4.5
Lead, Pb	mg/kg	1	11	16	10	9	7
Nickel, Ni	mg/kg	0.5	3.1	5.6	0.8	10	3.8
Zinc, Zn	mg/kg	0.5	21	46	3.6	41	18

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
Arsenic, As	mg/kg	3	6	<3	<3	3	<3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	9.7	5.9	7.5	6.1	5.5
Copper, Cu	mg/kg	0.5	7.9	<0.5	<0.5	4.2	6.7
Lead, Pb	mg/kg	1	9	4	5	23	16
Nickel, Ni	mg/kg	0.5	1.0	<0.5	<0.5	1.8	4.3
Zinc, Zn	mg/kg	0.5	10	2.4	1.2	44	59

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Arsenic, As	mg/kg	3	4	3	3	12	11
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	0.4	1.0	0.6
Chromium, Cr	mg/kg	0.3	7.4	3.8	9.0	610	9.4
Copper, Cu	mg/kg	0.5	0.6	1.6	18	240	110
Lead, Pb	mg/kg	1	10	10	38	59	140
Nickel, Ni	mg/kg	0.5	0.6	0.6	5.4	71	3.9
Zinc, Zn	mg/kg	0.5	9.9	6.7	290	140	49

Total Recoverable Metals in Soil by ICPOES [AN040/AN320] Tested: 18/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027
Arsenic, As	mg/kg	3	4	7	<3	7	4
Cadmium, Cd	mg/kg	0.3	<0.3	0.4	0.4	<0.3	0.3
Chromium, Cr	mg/kg	0.3	10	36	7.3	18	24
Copper, Cu	mg/kg	0.5	6.3	0.9	13	<0.5	4.7
Lead, Pb	mg/kg	1	27	14	29	9	25
Nickel, Ni	mg/kg	0.5	1.6	1.4	3.5	<0.5	3.9
Zinc, Zn	mg/kg	0.5	64	9.2	100	3.4	39

PARAMETER	UOM	LOR	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Arsenic, As	mg/kg	3	<3	4
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	24	15
Copper, Cu	mg/kg	0.5	0.5	2.9
Lead, Pb	mg/kg	1	8	16
Nickel, Ni	mg/kg	0.5	0.9	1.2
Zinc, Zn	mg/kg	0.5	3.2	21

Mercury in Soil [AN312] Tested: 17/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
Mercury	mg/kg	0.01	0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
Mercury	mg/kg	0.01	<0.01	<0.01	<0.01	0.02	<0.01

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
Mercury	mg/kg	0.01	<0.01	<0.01	<0.01	0.01	<0.01

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Mercury	mg/kg	0.01	<0.01	0.01	0.03	0.08	0.02

PARAMETER	UOM	LOR	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027
Mercury	mg/kg	0.01	0.02	<0.01	0.01	<0.01	0.02

PARAMETER	UOM	LOR	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
Mercury	mg/kg	0.01	0.02	<0.01

Moisture Content [AN002] Tested: 17/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_1_ESMW01_1.0 SOIL - 10/11/2015 SE145989.002	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESMW06_1.4 SOIL - 10/11/2015 SE145989.004	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005
% Moisture	%w/w	0.5	18	21	17	11	11

PARAMETER	UOM	LOR	T_5_ESSB03_1.0 SOIL - 10/11/2015 SE145989.006	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESSB04_1.0 SOIL - 10/11/2015 SE145989.008	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009	T_5_ESMW04_2.0 SOIL - 10/11/2015 SE145989.010
% Moisture	%w/w	0.5	16	13	31	16	17

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_5_ESMW03_2.0 SOIL - 10/11/2015 SE145989.012	DUPJO101115 SOIL - 10/11/2015 SE145989.013	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015
% Moisture	%w/w	0.5	18	19	21	16	23

PARAMETER	UOM	LOR	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
% Moisture	%w/w	0.5	14	12	22	20	11

PARAMETER	UOM	LOR	Tripblank SOIL - 10/11/2015 SE145989.022	T_2_ESMW02_0.1 SOIL - 10/11/2015 SE145989.023	T_2_ESMW02_0.5 SOIL - 10/11/2015 SE145989.024	T_2_ESSB01_0.1 SOIL - 10/11/2015 SE145989.025	T_2_ESSB01_1.0 SOIL - 10/11/2015 SE145989.026
% Moisture	%w/w	0.5	<0.5	21	30	22	22

PARAMETER	UOM	LOR	T_ESSB05_0.1 SOIL - 10/11/2015 SE145989.027	T_ESSB05_3.0 SOIL - 10/11/2015 SE145989.028	DUPJO111115 SOIL - 10/11/2015 SE145989.029
% Moisture	%w/w	0.5	20	18	18

Fibre Identification in soil [AN602] Tested: 18/11/2015

PARAMETER	UOM	LOR	T_1_ESMW01_0.1 SOIL - 10/11/2015 SE145989.001	T_5_ESMW06_0.1 SOIL - 10/11/2015 SE145989.003	T_5_ESSB03_0.1 SOIL - 10/11/2015 SE145989.005	T_5_ESSB04_0.1 SOIL - 10/11/2015 SE145989.007	T_5_ESMW04_0.1 SOIL - 10/11/2015 SE145989.009
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_5_ESMW03_0.1 SOIL - 10/11/2015 SE145989.011	T_4_SP01A SOIL - 10/11/2015 SE145989.014	T_4_SP01B SOIL - 10/11/2015 SE145989.015	T_6_SP02A SOIL - 10/11/2015 SE145989.016	T_6_SP02B SOIL - 10/11/2015 SE145989.017
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_7_SP03A SOIL - 10/11/2015 SE145989.018	T_7_SP03B SOIL - 10/11/2015 SE145989.019	T_7_SP03C SOIL - 10/11/2015 SE145989.020
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

METHOD	METHODOLOGY SUMMARY
AN002	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.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	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 analysis by ASS or ICP as per USEPA Method 200.8.
AN312	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
AN400	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 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
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 differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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STATEMENT OF QA/QC PERFORMANCE

SE145989 R0

CLIENT DETAILS

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Project	**15107**
Order Number	(Not specified)
Samples	29

LABORATORY DETAILS

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SGS Reference	**SE145989 R0**
Date Received	13 Nov 2015
Date Reported	23 Nov 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Duplicate	Total Recoverable Metals in Soil by ICPOES	2 items
Matrix Spike	Total Recoverable Metals in Soil by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	29 Soil	Type of documentation received	COC
Date documentation received	13/11/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

HOLDING TIME SUMMARY

SE145989 R0

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.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_4_SP01A	SE145989.014	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_4_SP01B	SE145989.015	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_6_SP02A	SE145989.016	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_6_SP02B	SE145989.017	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_7_SP03A	SE145989.018	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_7_SP03B	SE145989.019	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015
T_7_SP03C	SE145989.020	LB089937	10 Nov 2015	13 Nov 2015	09 Nov 2016	18 Nov 2015	09 Nov 2016	20 Nov 2015

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089824	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
DUPJO101115	SE145989.013	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_4_SP01A	SE145989.014	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_4_SP01B	SE145989.015	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_6_SP02A	SE145989.016	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_6_SP02B	SE145989.017	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_7_SP03A	SE145989.018	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_7_SP03B	SE145989.019	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_7_SP03C	SE145989.020	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015
DUPJO111115	SE145989.029	LB089825	10 Nov 2015	13 Nov 2015	08 Dec 2015	17 Nov 2015	08 Dec 2015	19 Nov 2015

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
DUPJO101115	SE145989.013	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_4_SP01A	SE145989.014	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_4_SP01B	SE145989.015	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015

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.

Moisture Content (continued)

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_6_SP02A	SE145989.016	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_6_SP02B	SE145989.017	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_7_SP03A	SE145989.018	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_7_SP03B	SE145989.019	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_7_SP03C	SE145989.020	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
Tripblank	SE145989.022	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015
DUPJO111115	SE145989.029	LB089788	10 Nov 2015	13 Nov 2015	24 Nov 2015	17 Nov 2015	22 Nov 2015	19 Nov 2015

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO101115	SE145989.013	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_4_SP01A	SE145989.014	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_4_SP01B	SE145989.015	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_6_SP02A	SE145989.016	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_6_SP02B	SE145989.017	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03A	SE145989.018	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03B	SE145989.019	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03C	SE145989.020	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO111115	SE145989.029	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
DUPJO101115	SE145989.013	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_4_SP01A	SE145989.014	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_4_SP01B	SE145989.015	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015

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.

PCBs in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_6_SP02A	SE145989.016	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_6_SP02B	SE145989.017	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_7_SP03A	SE145989.018	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_7_SP03B	SE145989.019	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_7_SP03C	SE145989.020	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015
DUPJO111115	SE145989.029	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	23 Nov 2015

Total Recoverable Metals in Soil by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
DUPJO101115	SE145989.013	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_4_SP01A	SE145989.014	LB089903	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_4_SP01B	SE145989.015	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_6_SP02A	SE145989.016	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_6_SP02B	SE145989.017	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_7_SP03A	SE145989.018	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_7_SP03B	SE145989.019	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_7_SP03C	SE145989.020	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015
DUPJO111115	SE145989.029	LB089904	10 Nov 2015	13 Nov 2015	08 May 2016	18 Nov 2015	08 May 2016	19 Nov 2015

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
DUPJO101115	SE145989.013	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_4_SP01A	SE145989.014	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_4_SP01B	SE145989.015	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_6_SP02A	SE145989.016	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015

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.

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_6_SP02B	SE145989.017	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03A	SE145989.018	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03B	SE145989.019	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03C	SE145989.020	LB089758	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
DUPJO111115	SE145989.029	LB089759	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO101115	SE145989.013	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_4_SP01A	SE145989.014	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_4_SP01B	SE145989.015	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_6_SP02A	SE145989.016	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_6_SP02B	SE145989.017	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03A	SE145989.018	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03B	SE145989.019	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_7_SP03C	SE145989.020	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
Tripspike	SE145989.021	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
Tripblank	SE145989.022	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO111115	SE145989.029	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_1_ESMW01_0.1	SE145989.001	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_1_ESMW01_1.0	SE145989.002	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_0.1	SE145989.003	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW06_1.4	SE145989.004	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_0.1	SE145989.005	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB03_1.0	SE145989.006	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_0.1	SE145989.007	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESSB04_1.0	SE145989.008	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW04_0.1	SE145989.009	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW04_2.0	SE145989.010	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW03_0.1	SE145989.011	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_5_ESMW03_2.0	SE145989.012	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO101115	SE145989.013	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_4_SP01A	SE145989.014	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_4_SP01B	SE145989.015	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015

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.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_6_SP02A	SE145989.016	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_6_SP02B	SE145989.017	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03A	SE145989.018	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03B	SE145989.019	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_7_SP03C	SE145989.020	LB089762	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
Tripspike	SE145989.021	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
Tripblank	SE145989.022	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.1	SE145989.023	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	22 Nov 2015
T_2_ESMW02_0.5	SE145989.024	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESSB01_0.1	SE145989.025	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_2_ESSB01_1.0	SE145989.026	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_0.1	SE145989.027	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
T_ESSB05_3.0	SE145989.028	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015
DUPJO111115	SE145989.029	LB089763	10 Nov 2015	13 Nov 2015	24 Nov 2015	16 Nov 2015	26 Dec 2015	19 Nov 2015

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	70 - 130%	72
	T_1_ESMW01_1.0	SE145989.002	%	70 - 130%	76
	T_5_ESMW06_0.1	SE145989.003	%	70 - 130%	86
	T_5_ESMW06_1.4	SE145989.004	%	70 - 130%	92
	T_5_ESSB03_0.1	SE145989.005	%	70 - 130%	84
	T_5_ESSB03_1.0	SE145989.006	%	70 - 130%	82
	T_5_ESSB04_0.1	SE145989.007	%	70 - 130%	84
	T_5_ESSB04_1.0	SE145989.008	%	70 - 130%	88
	T_5_ESMW04_0.1	SE145989.009	%	70 - 130%	86
	T_5_ESMW04_2.0	SE145989.010	%	70 - 130%	80
	T_5_ESMW03_0.1	SE145989.011	%	70 - 130%	88
	T_5_ESMW03_2.0	SE145989.012	%	70 - 130%	72
	DUPJO101115	SE145989.013	%	70 - 130%	72
	T_4_SP01A	SE145989.014	%	70 - 130%	82
	T_4_SP01B	SE145989.015	%	70 - 130%	86
	T_6_SP02A	SE145989.016	%	70 - 130%	72
	T_6_SP02B	SE145989.017	%	70 - 130%	72
	T_7_SP03A	SE145989.018	%	70 - 130%	86
	T_7_SP03B	SE145989.019	%	70 - 130%	86
	T_7_SP03C	SE145989.020	%	70 - 130%	78
	T_2_ESMW02_0.1	SE145989.023	%	70 - 130%	86
	T_2_ESMW02_0.5	SE145989.024	%	70 - 130%	72
	T_2_ESSB01_0.1	SE145989.025	%	70 - 130%	80
	T_2_ESSB01_1.0	SE145989.026	%	70 - 130%	70
	T_ESSB05_0.1	SE145989.027	%	70 - 130%	74
	T_ESSB05_3.0	SE145989.028	%	70 - 130%	72
	DUPJO111115	SE145989.029	%	70 - 130%	72
d14-p-terphenyl (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	70 - 130%	82
	T_1_ESMW01_1.0	SE145989.002	%	70 - 130%	106
	T_5_ESMW06_0.1	SE145989.003	%	70 - 130%	102
	T_5_ESMW06_1.4	SE145989.004	%	70 - 130%	106
	T_5_ESSB03_0.1	SE145989.005	%	70 - 130%	114
	T_5_ESSB03_1.0	SE145989.006	%	70 - 130%	96
	T_5_ESSB04_0.1	SE145989.007	%	70 - 130%	84
	T_5_ESSB04_1.0	SE145989.008	%	70 - 130%	100
	T_5_ESMW04_0.1	SE145989.009	%	70 - 130%	100
	T_5_ESMW04_2.0	SE145989.010	%	70 - 130%	98
	T_5_ESMW03_0.1	SE145989.011	%	70 - 130%	102
	T_5_ESMW03_2.0	SE145989.012	%	70 - 130%	96
	DUPJO101115	SE145989.013	%	70 - 130%	100
	T_4_SP01A	SE145989.014	%	70 - 130%	104
	T_4_SP01B	SE145989.015	%	70 - 130%	100
	T_6_SP02A	SE145989.016	%	70 - 130%	100
	T_6_SP02B	SE145989.017	%	70 - 130%	98
	T_7_SP03A	SE145989.018	%	70 - 130%	96
	T_7_SP03B	SE145989.019	%	70 - 130%	114
	T_7_SP03C	SE145989.020	%	70 - 130%	104
	T_2_ESMW02_0.1	SE145989.023	%	70 - 130%	104
	T_2_ESMW02_0.5	SE145989.024	%	70 - 130%	100
	T_2_ESSB01_0.1	SE145989.025	%	70 - 130%	104
	T_2_ESSB01_1.0	SE145989.026	%	70 - 130%	100
	T_ESSB05_0.1	SE145989.027	%	70 - 130%	98
	T_ESSB05_3.0	SE145989.028	%	70 - 130%	100
	DUPJO111115	SE145989.029	%	70 - 130%	102
d5-nitrobenzene (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	70 - 130%	84
	T_1_ESMW01_1.0	SE145989.002	%	70 - 130%	94
	T_5_ESMW06_0.1	SE145989.003	%	70 - 130%	90
	T_5_ESMW06_1.4	SE145989.004	%	70 - 130%	96
	T_5_ESSB03_0.1	SE145989.005	%	70 - 130%	90
	T_5_ESSB03_1.0	SE145989.006	%	70 - 130%	90
	T_5_ESSB04_0.1	SE145989.007	%	70 - 130%	102

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d5-nitrobenzene (Surrogate)	T_5_ESSB04_1.0	SE145989.008	%	70 - 130%	98
	T_5_ESMW04_0.1	SE145989.009	%	70 - 130%	94
	T_5_ESMW04_2.0	SE145989.010	%	70 - 130%	90
	T_5_ESMW03_0.1	SE145989.011	%	70 - 130%	96
	T_5_ESMW03_2.0	SE145989.012	%	70 - 130%	88
	DUPJO101115	SE145989.013	%	70 - 130%	94
	T_4_SP01A	SE145989.014	%	70 - 130%	88
	T_4_SP01B	SE145989.015	%	70 - 130%	92
	T_6_SP02A	SE145989.016	%	70 - 130%	94
	T_6_SP02B	SE145989.017	%	70 - 130%	88
	T_7_SP03A	SE145989.018	%	70 - 130%	94
	T_7_SP03B	SE145989.019	%	70 - 130%	96
	T_7_SP03C	SE145989.020	%	70 - 130%	96
	T_2_ESMW02_0.1	SE145989.023	%	70 - 130%	88
	T_2_ESMW02_0.5	SE145989.024	%	70 - 130%	88
	T_2_ESSB01_0.1	SE145989.025	%	70 - 130%	104
	T_2_ESSB01_1.0	SE145989.026	%	70 - 130%	84
	T_ESSB05_0.1	SE145989.027	%	70 - 130%	92
	T_ESSB05_3.0	SE145989.028	%	70 - 130%	88
	DUPJO111115	SE145989.029	%	70 - 130%	88

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	83
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	79
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	99
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	84
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	99
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	87
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	90
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	81
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	86
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	91
	T_4_SP01A	SE145989.014	%	60 - 130%	81
	T_4_SP01B	SE145989.015	%	60 - 130%	89
	T_6_SP02A	SE145989.016	%	60 - 130%	94
	T_6_SP02B	SE145989.017	%	60 - 130%	91
	T_7_SP03A	SE145989.018	%	60 - 130%	87
	T_7_SP03B	SE145989.019	%	60 - 130%	100
	T_7_SP03C	SE145989.020	%	60 - 130%	106
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	89
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	99
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	95
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	94
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	101
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	91
	DUPJO111115	SE145989.029	%	60 - 130%	97

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	76
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	85
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	86
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	84
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	84
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	82
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	83
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	72
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	83
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	84
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	75
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	88

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DUPJO101115	SE145989.013	%	60 - 130%	84
	T_4_SP01A	SE145989.014	%	60 - 130%	77
	T_4_SP01B	SE145989.015	%	60 - 130%	74
	T_6_SP02A	SE145989.016	%	60 - 130%	98
	T_6_SP02B	SE145989.017	%	60 - 130%	85
	T_7_SP03A	SE145989.018	%	60 - 130%	77
	T_7_SP03B	SE145989.019	%	60 - 130%	81
	T_7_SP03C	SE145989.020	%	60 - 130%	73
	Tripspike	SE145989.021	%	60 - 130%	89
	Tripblank	SE145989.022	%	60 - 130%	90
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	78
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	92
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	79
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	84
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	86
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	88
	DUPJO111115	SE145989.029	%	60 - 130%	90
d4-1,2-dichloroethane (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	119
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	127
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	108
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	106
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	92
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	110
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	125
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	112
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	119
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	119
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	100
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	116
	DUPJO101115	SE145989.013	%	60 - 130%	102
	T_4_SP01A	SE145989.014	%	60 - 130%	104
	T_4_SP01B	SE145989.015	%	60 - 130%	100
	T_6_SP02A	SE145989.016	%	60 - 130%	111
	T_6_SP02B	SE145989.017	%	60 - 130%	107
	T_7_SP03A	SE145989.018	%	60 - 130%	99
	T_7_SP03B	SE145989.019	%	60 - 130%	95
	T_7_SP03C	SE145989.020	%	60 - 130%	95
	Tripspike	SE145989.021	%	60 - 130%	117
	Tripblank	SE145989.022	%	60 - 130%	130
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	99
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	107
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	104
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	114
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	106
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	119
	DUPJO111115	SE145989.029	%	60 - 130%	106
d8-toluene (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	80
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	90
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	91
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	96
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	90
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	98
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	84
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	76
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	87
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	115
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	72
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	83
	DUPJO101115	SE145989.013	%	60 - 130%	93
	T_4_SP01A	SE145989.014	%	60 - 130%	75
	T_4_SP01B	SE145989.015	%	60 - 130%	70

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	T_6_SP02A	SE145989.016	%	60 - 130%	98
	T_6_SP02B	SE145989.017	%	60 - 130%	78
	T_7_SP03A	SE145989.018	%	60 - 130%	87
	T_7_SP03B	SE145989.019	%	60 - 130%	86
	T_7_SP03C	SE145989.020	%	60 - 130%	76
	Tripspike	SE145989.021	%	60 - 130%	83
	Tripblank	SE145989.022	%	60 - 130%	87
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	72
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	87
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	73
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	92
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	87
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	90
	DUPJO111115	SE145989.029	%	60 - 130%	91
Dibromofluoromethane (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	94
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	114
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	107
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	129
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	118
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	114
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	109
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	128
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	102
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	97
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	86
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	94
	DUPJO101115	SE145989.013	%	60 - 130%	115
	T_4_SP01A	SE145989.014	%	60 - 130%	88
	T_4_SP01B	SE145989.015	%	60 - 130%	86
	T_6_SP02A	SE145989.016	%	60 - 130%	118
	T_6_SP02B	SE145989.017	%	60 - 130%	95
	T_7_SP03A	SE145989.018	%	60 - 130%	83
	T_7_SP03B	SE145989.019	%	60 - 130%	80
	T_7_SP03C	SE145989.020	%	60 - 130%	81
	Tripspike	SE145989.021	%	60 - 130%	104
	Tripblank	SE145989.022	%	60 - 130%	116
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	87
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	97
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	93
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	127
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	123
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	122
	DUPJO111115	SE145989.029	%	60 - 130%	98

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	83
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	85
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	86
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	84
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	84
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	82
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	83
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	84
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	84
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	84
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	86
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	88
	DUPJO101115	SE145989.013	%	60 - 130%	84
	T_4_SP01A	SE145989.014	%	60 - 130%	85
	T_4_SP01B	SE145989.015	%	60 - 130%	84

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_6_SP02A	SE145989.016	%	60 - 130%	85
	T_6_SP02B	SE145989.017	%	60 - 130%	82
	T_7_SP03A	SE145989.018	%	60 - 130%	85
	T_7_SP03B	SE145989.019	%	60 - 130%	86
	T_7_SP03C	SE145989.020	%	60 - 130%	88
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	86
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	92
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	125
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	84
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	86
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	88
	DUPJO111115	SE145989.029	%	60 - 130%	90
d4-1,2-dichloroethane (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	120
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	127
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	108
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	106
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	92
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	110
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	125
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	114
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	99
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	119
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	121
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	116
	DUPJO101115	SE145989.013	%	60 - 130%	102
	T_4_SP01A	SE145989.014	%	60 - 130%	124
	T_4_SP01B	SE145989.015	%	60 - 130%	121
	T_6_SP02A	SE145989.016	%	60 - 130%	124
	T_6_SP02B	SE145989.017	%	60 - 130%	129
	T_7_SP03A	SE145989.018	%	60 - 130%	118
	T_7_SP03B	SE145989.019	%	60 - 130%	114
	T_7_SP03C	SE145989.020	%	60 - 130%	115
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	119
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	107
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	104
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	114
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	106
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	119
	DUPJO111115	SE145989.029	%	60 - 130%	106
d8-toluene (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	89
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	90
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	91
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	96
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	90
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	98
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	84
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	84
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	97
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	115
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	78
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	83
	DUPJO101115	SE145989.013	%	60 - 130%	93
	T_4_SP01A	SE145989.014	%	60 - 130%	83
	T_4_SP01B	SE145989.015	%	60 - 130%	76
	T_6_SP02A	SE145989.016	%	60 - 130%	109
	T_6_SP02B	SE145989.017	%	60 - 130%	88
	T_7_SP03A	SE145989.018	%	60 - 130%	73
	T_7_SP03B	SE145989.019	%	60 - 130%	71
	T_7_SP03C	SE145989.020	%	60 - 130%	72
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	117
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	87

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	74
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	92
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	87
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	90
	DUPJO111115	SE145989.029	%	60 - 130%	91
Dibromofluoromethane (Surrogate)	T_1_ESMW01_0.1	SE145989.001	%	60 - 130%	99
	T_1_ESMW01_1.0	SE145989.002	%	60 - 130%	114
	T_5_ESMW06_0.1	SE145989.003	%	60 - 130%	107
	T_5_ESMW06_1.4	SE145989.004	%	60 - 130%	129
	T_5_ESSB03_0.1	SE145989.005	%	60 - 130%	118
	T_5_ESSB03_1.0	SE145989.006	%	60 - 130%	114
	T_5_ESSB04_0.1	SE145989.007	%	60 - 130%	109
	T_5_ESSB04_1.0	SE145989.008	%	60 - 130%	96
	T_5_ESMW04_0.1	SE145989.009	%	60 - 130%	124
	T_5_ESMW04_2.0	SE145989.010	%	60 - 130%	97
	T_5_ESMW03_0.1	SE145989.011	%	60 - 130%	105
	T_5_ESMW03_2.0	SE145989.012	%	60 - 130%	94
	DUPJO101115	SE145989.013	%	60 - 130%	115
	T_4_SP01A	SE145989.014	%	60 - 130%	108
	T_4_SP01B	SE145989.015	%	60 - 130%	105
	T_6_SP02A	SE145989.016	%	60 - 130%	111
	T_6_SP02B	SE145989.017	%	60 - 130%	116
	T_7_SP03A	SE145989.018	%	60 - 130%	101
	T_7_SP03B	SE145989.019	%	60 - 130%	99
	T_7_SP03C	SE145989.020	%	60 - 130%	100
	T_2_ESMW02_0.1	SE145989.023	%	60 - 130%	106
	T_2_ESMW02_0.5	SE145989.024	%	60 - 130%	97
	T_2_ESSB01_0.1	SE145989.025	%	60 - 130%	114
	T_2_ESSB01_1.0	SE145989.026	%	60 - 130%	127
	T_ESSB05_0.1	SE145989.027	%	60 - 130%	123
	T_ESSB05_3.0	SE145989.028	%	60 - 130%	122
	DUPJO111115	SE145989.029	%	60 - 130%	98

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB089824.001	Mercury	mg/kg	0.01	<0.01
LB089825.001	Mercury	mg/kg	0.01	<0.01

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB089758.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	94
		2-fluorobiphenyl (Surrogate)	%	-	72
		d14-p-terphenyl (Surrogate)	%	-	108
LB089759.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	100
		2-fluorobiphenyl (Surrogate)	%	-	76
		d14-p-terphenyl (Surrogate)	%	-	108

PCBs in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB089758.001		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
		Arochlor 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
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87
LB089759.001		Arochlor 1016	mg/kg	0.2	<0.2
		Arochlor 1221	mg/kg	0.2	<0.2

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

PCBs in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB089759.001		Arochlor 1232	mg/kg	0.2	<0.2
		Arochlor 1242	mg/kg	0.2	<0.2
		Arochlor 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
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	105

Total Recoverable Metals in Soil by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB089903.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
LB089904.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB089758.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB089759.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

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

Sample Number		Parameter	Units	LOR	Result
LB089762.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		Iodomethane	mg/kg	5	<5
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB089762.001	Halogenated Aliphatics	1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		cis-1,4-dichloro-2-butene	mg/kg	1	<1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate	mg/kg	10	<10
		MEK (2-butanone)	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	94
		d4-1,2-dichloroethane (Surrogate)	%	-	122
		d8-toluene (Surrogate)	%	-	126
		Bromofluorobenzene (Surrogate)	%	-	81
	Totals	Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform	mg/kg	0.1	<0.1
		Bromodichloromethane	mg/kg	0.1	<0.1
		Chlorodibromomethane	mg/kg	0.1	<0.1
		Bromoform	mg/kg	0.1	<0.1
LB089763.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB089763.001	Fumigants	1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		Iodomethane	mg/kg	5	<5
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		cis-1,4-dichloro-2-butene	mg/kg	1	<1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate	mg/kg	10	<10
		MEK (2-butanone)	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB089763.001	Oxygenated Compounds	2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	110
		d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	110
		Bromofluorobenzene (Surrogate)	%	-	113
	Totals	Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform	mg/kg	0.1	<0.1
		Bromodichloromethane	mg/kg	0.1	<0.1
		Chlorodibromomethane	mg/kg	0.1	<0.1
		Bromoform	mg/kg	0.1	<0.1

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB089762.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	86
		d4-1,2-dichloroethane (Surrogate)	%	-	109
		d8-toluene (Surrogate)	%	-	85
LB089763.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	110
		d4-1,2-dichloroethane (Surrogate)	%	-	118
		d8-toluene (Surrogate)	%	-	121

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.003	LB089824.014	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE145989.012	LB089824.024	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE145989.024	LB089825.014	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE145996.001	LB089825.024	Mercury	mg/kg	0.01	<0.01	<0.01	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089788.011	% Moisture	%w/w	0.5	17	16	36	6
SE145989.020	LB089788.022	% Moisture	%w/w	0.5	11	11	39	3
SE145989.029	LB089788.031	% Moisture	%w/w	0.5	18	19	35	5

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089758.014		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	0.2	0.2	79	5
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.5	0.4	54	26
			Pyrene	mg/kg	0.1	0.4	0.3	58	25
			Benzo(a)anthracene	mg/kg	0.1	0.2	0.2	79	15
			Chrysene	mg/kg	0.1	0.2	0.1	99	34
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.2	0.1	87	51
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	141	0
			Benzo(a)pyrene	mg/kg	0.1	0.2	0.1	99	62
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	0.2	<0.2	114	20
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.4	<0.3	109	17
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.3	<0.2	90	40
			Total PAH	mg/kg	0.8	2.3	1.7	71	32
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	30	7
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6
SE145989.020	LB089758.025		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	0.2	0.2	74	13
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	0.3	0.3	64	0
			Pyrene	mg/kg	0.1	0.3	0.3	67	7
			Benzo(a)anthracene	mg/kg	0.1	0.3	0.3	64	10
			Chrysene	mg/kg	0.1	0.2	0.2	84	5
			Benzo(b&j)fluoranthene	mg/kg	0.1	0.4	0.4	58	0
			Benzo(k)fluoranthene	mg/kg	0.1	0.1	0.1	113	0
			Benzo(a)pyrene	mg/kg	0.1	0.2	0.2	78	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	148	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	148	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	0.3	0.3	79	1
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	0.4	0.4	85	1
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	0.3	0.3	68	1
			Total PAH	mg/kg	0.8	2.3	2.4	64	3
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	4

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.020	LB089758.025	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
SE145989.026	LB089759.012		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	5
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	6

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089758.014		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 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
			Arochlor 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)	mg/kg	-	0	0	30	3
SE145989.020	LB089758.025		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 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
			Arochlor 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)	mg/kg	-	0	0	30	6
SE145989.026	LB089759.012		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 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
			Arochlor 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

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.026	LB089759.012		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	1

Total Recoverable Metals in Soil by ICPOES

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.005	LB089903.014		Arsenic, As	mg/kg	3	3	3	61	3
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	186	0
			Chromium, Cr	mg/kg	0.3	7.9	8.4	36	6
			Copper, Cu	mg/kg	0.5	12	21	33	58 ②
			Lead, Pb	mg/kg	1	19	20	35	3
			Nickel, Ni	mg/kg	0.5	5.9	5.5	39	7
			Zinc, Zn	mg/kg	0.5	56	52	34	6
SE145989.014	LB089903.024		Arsenic, As	mg/kg	3	3	3	61	14
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	167	0
			Chromium, Cr	mg/kg	0.3	6.1	9.9	36	47 ②
			Copper, Cu	mg/kg	0.5	4.2	3.5	43	17
			Lead, Pb	mg/kg	1	23	19	35	19
			Nickel, Ni	mg/kg	0.5	1.8	1.4	62	25
			Zinc, Zn	mg/kg	0.5	44	37	35	18
SE145989.026	LB089904.014		Arsenic, As	mg/kg	3	7	7	45	2
			Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	142	0
			Chromium, Cr	mg/kg	0.3	18	17	33	5
			Copper, Cu	mg/kg	0.5	<0.5	<0.5	200	0
			Lead, Pb	mg/kg	1	9	8	42	9
			Nickel, Ni	mg/kg	0.5	<0.5	<0.5	200	0
			Zinc, Zn	mg/kg	0.5	3.4	3.1	91	9

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089758.014		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE145989.020	LB089758.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE145989.026	LB089759.012		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

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

Original	Duplicate	Parameter	Units	LOR

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089762.015	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5.6	50	15
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.0	5.5	50	9
			d8-toluene (Surrogate)	mg/kg	-	5.7	4.3	50	29
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.2	50	1
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE145989.020	LB089762.026	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	200	0
		Aliphatics	Chloromethane	mg/kg	1	<1	<1	200	0
			Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	200	0
			Bromomethane	mg/kg	1	<1	<1	200	0
			Chloroethane	mg/kg	1	<1	<1	200	0
			Trichlorofluoromethane	mg/kg	1	<1	<1	200	0
			Iodomethane	mg/kg	5	<5	<5	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	200	0
			Allyl chloride	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	200	0
			Dibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			cis-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatics	Bromobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.020	LB089762.026	Monocyclic	Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
		Nitrogenous	Acrylonitrile	mg/kg	0.1	<0.1	<0.1	200	0
		Compounds	2-nitropropane	mg/kg	10	<10	<10	200	0
		Oxygenated	Acetone (2-propanone)	mg/kg	10	<10	<10	200	0
		Compounds	MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	200	0
			Vinyl acetate	mg/kg	10	<10	<10	200	0
			MEK (2-butanone)	mg/kg	10	<10	<10	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	200	0
			2-hexanone (MBK)	mg/kg	5	<5	<5	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	<0.5	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.1	4.2	50	2
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	4.7	50	1
			d8-toluene (Surrogate)	mg/kg	-	3.8	4.6	50	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.7	3.8	50	4
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
		Trihalomethan	Chloroform	mg/kg	0.1	<0.1	<0.1	200	0
		es	Bromodichloromethane	mg/kg	0.1	<0.1	<0.1	200	0
			Chlorodibromomethane	mg/kg	0.1	<0.1	<0.1	200	0
			Bromoform	mg/kg	0.1	<0.1	<0.1	200	0
SE145989.029	LB089763.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.9	5.3	50	8
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.3	5.7	50	7
			d8-toluene (Surrogate)	mg/kg	-	4.5	5.0	50	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.7	50	5
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.010	LB089762.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5.6	30	15
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.0	5.5	30	9
			d8-toluene (Surrogate)	mg/kg	-	5.7	4.3	30	29
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.2	4.2	30	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE145989.020	LB089762.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.0	5.1	30	2
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.8	5.7	30	2
			d8-toluene (Surrogate)	mg/kg	-	3.6	3.7	30	2
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.4	5.8	30	28
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE145989.029	LB089763.013		TRH C6-C10	mg/kg	25	<25	<25	200	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE145989.029	LB089763.013		TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.9	5.3	30	8
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.3	5.7	30	7
			d8-toluene (Surrogate)	mg/kg	-	4.5	5.0	30	10
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.7	30	5
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089824.002	Mercury	mg/kg	0.01	0.19	0.2	70 - 130	94
LB089825.002	Mercury	mg/kg	0.01	0.19	0.2	70 - 130	97

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089758.002		Naphthalene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthylene	mg/kg	0.1	3.3	4	60 - 140	82
		Acenaphthene	mg/kg	0.1	3.3	4	60 - 140	82
		Phenanthrene	mg/kg	0.1	3.3	4	60 - 140	83
		Anthracene	mg/kg	0.1	3.2	4	60 - 140	81
		Fluoranthene	mg/kg	0.1	3.2	4	60 - 140	80
		Pyrene	mg/kg	0.1	3.2	4	60 - 140	81
		Benzo(a)pyrene	mg/kg	0.1	3.1	4	60 - 140	78
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	74
LB089759.002		Naphthalene	mg/kg	0.1	3.8	4	60 - 140	95
		Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	94
		Acenaphthene	mg/kg	0.1	4.0	4	60 - 140	100
		Phenanthrene	mg/kg	0.1	4.4	4	60 - 140	111
		Anthracene	mg/kg	0.1	4.3	4	60 - 140	106
		Fluoranthene	mg/kg	0.1	4.1	4	60 - 140	103
		Pyrene	mg/kg	0.1	4.0	4	60 - 140	100
		Benzo(a)pyrene	mg/kg	0.1	3.5	4	60 - 140	87
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	96
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	86
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	98

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089758.002	Arochlor 1260	mg/kg	0.2	0.5	0.4	60 - 140	113
LB089759.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	108

Total Recoverable Metals in Soil by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089903.002	Arsenic, As	mg/kg	3	46	50	80 - 120	92
	Cadmium, Cd	mg/kg	0.3	47	50	80 - 120	95
	Chromium, Cr	mg/kg	0.3	46	50	80 - 120	93
	Copper, Cu	mg/kg	0.5	48	50	80 - 120	96
	Lead, Pb	mg/kg	1	47	50	80 - 120	94
	Nickel, Ni	mg/kg	0.5	47	50	80 - 120	93
	Zinc, Zn	mg/kg	0.5	49	50	80 - 120	98
LB089904.002	Arsenic, As	mg/kg	3	48	50	80 - 120	96
	Cadmium, Cd	mg/kg	0.3	49	50	80 - 120	99
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	96
	Copper, Cu	mg/kg	0.5	50	50	80 - 120	99
	Lead, Pb	mg/kg	1	48	50	80 - 120	97
	Nickel, Ni	mg/kg	0.5	48	50	80 - 120	96
	Zinc, Zn	mg/kg	0.5	50	50	80 - 120	99

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089758.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	93
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	80
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	39	40	60 - 140	98
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	88
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75
LB089759.002		TRH C10-C14	mg/kg	20	40	40	60 - 140	100
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	93
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	80

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.

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089759.002	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	39	40	60 - 140	98
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	88
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	75

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089762.002	Fumigants	2,2-dichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	80
		1,2-dichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	80
		cis-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	88
		trans-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	84
		1,2-dibromoethane (EDB)	mg/kg	0.1	0.4	0.5	60 - 140	86
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.5	60 - 140	76
		Chloromethane	mg/kg	1	<1	0.5	60 - 140	74
		Vinyl chloride (Chloroethene)	mg/kg	0.1	0.4	0.5	60 - 140	70
		Bromomethane	mg/kg	1	<1	0.5	60 - 140	112
		Chloroethane	mg/kg	1	<1	0.5	60 - 140	94
		Trichlorofluoromethane	mg/kg	1	<1	0.5	60 - 140	106
		Iodomethane	mg/kg	5	<5	0.5	60 - 140	76
		1,1-dichloroethene	mg/kg	0.1	2.2	2.56	60 - 140	84
		Dichloromethane (Methylene chloride)	mg/kg	0.5	0.6	0.5	60 - 140	120
		Allyl chloride	mg/kg	0.1	0.4	0.5	60 - 140	84
		trans-1,2-dichloroethene	mg/kg	0.1	0.4	0.5	60 - 140	70
		1,1-dichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	72
		cis-1,2-dichloroethene	mg/kg	0.1	0.4	0.5	60 - 140	72
		Bromochloromethane	mg/kg	0.1	0.4	0.5	60 - 140	70
		1,2-dichloroethane	mg/kg	0.1	1.9	2.56	60 - 140	74
		1,1,1-trichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	78
		1,1-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	82
		Carbon tetrachloride	mg/kg	0.1	0.6	0.5	60 - 140	122
		Dibromomethane	mg/kg	0.1	0.5	0.5	60 - 140	94
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	2.2	2.56	60 - 140	84
		1,1,2-trichloroethane	mg/kg	0.1	0.5	0.5	60 - 140	102
		1,3-dichloropropane	mg/kg	0.1	0.5	0.5	60 - 140	96
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	0.4	0.5	60 - 140	86
		1,1,1,2-tetrachloroethane	mg/kg	0.1	0.5	0.5	60 - 140	100
		cis-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	82
		1,1,2,2-tetrachloroethane	mg/kg	0.1	0.4	0.5	60 - 140	80
		1,2,3-trichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	80
		trans-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	78
		1,2-dibromo-3-chloropropane	mg/kg	0.1	0.4	0.5	60 - 140	80
		Hexachlorobutadiene	mg/kg	0.1	0.5	0.5	60 - 140	98
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	2.5	2.56	60 - 140	98
		Bromobenzene	mg/kg	0.1	0.4	0.5	60 - 140	86
		2-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	86
		4-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	80
		1,3-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	98
		1,4-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	98
		1,2-dichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	86
		1,2,4-trichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	72
		1,2,3-trichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	96
	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.8	2.9	60 - 140	95
		Toluene	mg/kg	0.1	3.1	2.9	60 - 140	108
		Ethylbenzene	mg/kg	0.1	2.8	2.9	60 - 140	97
		m/p-xylene	mg/kg	0.2	6.3	5.9	60 - 140	106
		o-xylene	mg/kg	0.1	2.9	2.9	60 - 140	100
		Styrene (Vinyl benzene)	mg/kg	0.1	0.4	0.5	60 - 140	72
		Isopropylbenzene (Cumene)	mg/kg	0.1	0.4	0.5	60 - 140	72
		n-propylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	70
		1,3,5-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
		tert-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	70
		1,2,4-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	80

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089762.002	Monocyclic Aromatic	sec-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
		p-isopropyltoluene	mg/kg	0.1	0.4	0.5	60 - 140	74
		n-butylbenzene	mg/kg	0.1	0.5	0.5	60 - 140	98
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	0.5	0.5	60 - 140	96
		2-nitropropane	mg/kg	10	<10	0.5	60 - 140	114
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	0.5	60 - 140	104
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	0.4	0.5	60 - 140	82
		Vinyl acetate	mg/kg	10	<10	0.5	60 - 140	94
		MEK (2-butanone)	mg/kg	10	<10	2.5	60 - 140	110
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.5	60 - 140	88
		2-hexanone (MBK)	mg/kg	5	<5	0.5	60 - 140	104
	Polycyclic	Naphthalene	mg/kg	0.1	0.4	0.5	60 - 140	72
	Sulphonated	Carbon disulfide	mg/kg	0.5	0.6	0.5	60 - 140	128
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5	60 - 140	95
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.8	5	60 - 140	95
		d8-toluene (Surrogate)	mg/kg	-	3.9	5	60 - 140	77
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.8	5	60 - 140	96
	Trihalomethanes	Chloroform	mg/kg	0.1	2.1	2.56	60 - 140	80
		Bromodichloromethane	mg/kg	0.1	0.5	0.5	60 - 140	92
		Chlorodibromomethane	mg/kg	0.1	0.4	0.5	60 - 140	82
		Bromoform	mg/kg	0.1	0.4	0.5	60 - 140	80
LB089763.002	Fumigants	2,2-dichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	74
		1,2-dichloropropane	mg/kg	0.1	0.6	0.5	60 - 140	112
		cis-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	72
		trans-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	80
		1,2-dibromoethane (EDB)	mg/kg	0.1	0.4	0.5	60 - 140	82
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.5	60 - 140	72
		Chloromethane	mg/kg	1	<1	0.5	60 - 140	78
		Vinyl chloride (Chloroethene)	mg/kg	0.1	0.4	0.5	60 - 140	72
		Bromomethane	mg/kg	1	<1	0.5	60 - 140	114
		Chloroethane	mg/kg	1	<1	0.5	60 - 140	96
		Trichlorofluoromethane	mg/kg	1	<1	0.5	60 - 140	70
		Iodomethane	mg/kg	5	<5	0.5	60 - 140	76
		1,1-dichloroethene	mg/kg	0.1	2.2	2.56	60 - 140	84
		Dichloromethane (Methylene chloride)	mg/kg	0.5	0.6	0.5	60 - 140	116
		Allyl chloride	mg/kg	0.1	0.5	0.5	60 - 140	96
		trans-1,2-dichloroethene	mg/kg	0.1	0.5	0.5	60 - 140	102
		1,1-dichloroethane	mg/kg	0.1	0.6	0.5	60 - 140	112
		cis-1,2-dichloroethene	mg/kg	0.1	0.5	0.5	60 - 140	96
		Bromochloromethane	mg/kg	0.1	0.6	0.5	60 - 140	120
		1,2-dichloroethane	mg/kg	0.1	1.9	2.56	60 - 140	74
		1,1,1-trichloroethane	mg/kg	0.1	0.6	0.5	60 - 140	122
		1,1-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	86
		Carbon tetrachloride	mg/kg	0.1	0.6	0.5	60 - 140	110
		Dibromomethane	mg/kg	0.1	0.6	0.5	60 - 140	116
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	2.2	2.56	60 - 140	84
		1,1,2-trichloroethane	mg/kg	0.1	0.5	0.5	60 - 140	98
		1,3-dichloropropane	mg/kg	0.1	0.5	0.5	60 - 140	90
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	0.4	0.5	60 - 140	82
		1,1,1,2-tetrachloroethane	mg/kg	0.1	0.5	0.5	60 - 140	98
		cis-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	118
		1,1,2,2-tetrachloroethane	mg/kg	0.1	0.4	0.5	60 - 140	82
		1,2,3-trichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	74
		trans-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	124
		1,2-dibromo-3-chloropropane	mg/kg	0.1	0.4	0.5	60 - 140	76
		Hexachlorobutadiene	mg/kg	0.1	0.4	0.5	60 - 140	72
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	2.5	2.56	60 - 140	98
		Bromobenzene	mg/kg	0.1	0.5	0.5	60 - 140	96
		2-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	80
		4-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	76
		1,3-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	96

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.

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089763.002	Halogenated Aromatics	1,4-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	94
		1,2-dichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	82
		1,2,4-trichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	100
		1,2,3-trichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	84
	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.6	2.9	60 - 140	88
		Toluene	mg/kg	0.1	2.4	2.9	60 - 140	81
		Ethylbenzene	mg/kg	0.1	2.5	2.9	60 - 140	85
		m/p-xylene	mg/kg	0.2	4.7	5.9	60 - 140	80
		o-xylene	mg/kg	0.1	2.5	2.9	60 - 140	85
		Styrene (Vinyl benzene)	mg/kg	0.1	0.4	0.5	60 - 140	70
		Isopropylbenzene (Cumene)	mg/kg	0.1	0.4	0.5	60 - 140	74
		n-propylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	88
		1,3,5-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	70
		tert-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
		1,2,4-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	72
		sec-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	74
		p-isopropyltoluene	mg/kg	0.1	0.4	0.5	60 - 140	88
		n-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	0.5	0.5	60 - 140	96
		2-nitropropane	mg/kg	10	<10	0.5	60 - 140	108
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	0.5	60 - 140	92
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	0.6	0.5	60 - 140	122
		Vinyl acetate	mg/kg	10	<10	0.5	60 - 140	76
		MEK (2-butanone)	mg/kg	10	<10	2.5	60 - 140	124
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.5	60 - 140	106
		2-hexanone (MBK)	mg/kg	5	<5	0.5	60 - 140	110
	Polycyclic	Naphthalene	mg/kg	0.1	0.6	0.5	60 - 140	122
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	0.5	60 - 140	76
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.6	5	60 - 140	92
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	108
		d8-toluene (Surrogate)	mg/kg	-	4.7	5	60 - 140	94
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.6	5	60 - 140	92
	Trihalomethanes	Chloroform	mg/kg	0.1	2.1	2.56	60 - 140	80
		Bromodichloromethane	mg/kg	0.1	0.6	0.5	60 - 140	118
		Chlorodibromomethane	mg/kg	0.1	0.4	0.5	60 - 140	82
		Bromoform	mg/kg	0.1	0.4	0.5	60 - 140	84

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB089762.002		TRH C6-C10	mg/kg	25	28	24.65	60 - 140	112
		TRH C6-C9	mg/kg	20	24	23.2	60 - 140	102
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.9	5	60 - 140	78
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.5	5	60 - 140	111
		d8-toluene (Surrogate)	mg/kg	-	5.8	5	60 - 140	117
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.0	5	60 - 140	80
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	135
LB089763.002		TRH C6-C10	mg/kg	25	27	24.65	60 - 140	108
		TRH C6-C9	mg/kg	20	20	23.2	60 - 140	86
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	6.0	5	60 - 140	119
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	108
		d8-toluene (Surrogate)	mg/kg	-	4.8	5	60 - 140	96
		Bromofluorobenzene (Surrogate)	mg/kg	-	3.9	5	60 - 140	79
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	115

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.

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145903.001	LB089824.004	Mercury	mg/kg	0.01	0.21	0.07	0.2	73
SE145989.013	LB089825.004	Mercury	mg/kg	0.01	0.18	<0.01	0.2	92

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145989.001	LB089758.026		Naphthalene	mg/kg	0.1	3.8	<0.1	4	95
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	3.9	<0.1	4	98
			Acenaphthene	mg/kg	0.1	3.6	<0.1	4	91
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	4.2	<0.1	4	104
			Anthracene	mg/kg	0.1	3.9	<0.1	4	98
			Fluoranthene	mg/kg	0.1	4.1	<0.1	4	102
			Pyrene	mg/kg	0.1	4.0	<0.1	4	99
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	3.7	<0.1	4	93
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	3.7	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	3.9	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	3.8	<0.2	-	-
			Total PAH	mg/kg	0.8	31	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.4	-	96
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	80
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	-	98

PCBs in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145989.003	LB089758.026		Arochlor 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	-	-
			Arochlor 1254	mg/kg	0.2	<0.2	<0.2	-	-
			Arochlor 1260	mg/kg	0.2	0.4	<0.2	0.4	95
			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)	mg/kg	-	0	0	-	84

Total Recoverable Metals in Soil by ICPOES

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145954.001	LB089903.004	Lead, Pb	mg/kg	1	50	2	50	95
SE145989.015	LB089904.004	Arsenic, As	mg/kg	3	46	<3	50	89
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.3	51	5.5	50	92
		Copper, Cu	mg/kg	0.5	55	6.7	50	96
		Lead, Pb	mg/kg	1	57	16	50	83
		Nickel, Ni	mg/kg	0.5	49	4.3	50	89
		Zinc, Zn	mg/kg	0.5	94	59	50	69 ④

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145989.001	LB089758.026	TRH C10-C14	mg/kg	20	49	<20	40	123
		TRH C15-C28	mg/kg	45	47	<45	40	118
		TRH C29-C36	mg/kg	45	<45	<45	40	100

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.

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145989.001	LB089758.026		TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	140	<110	-	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	48	<25	40	120
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	48	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	115
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433/AN434/AN410

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE145989.001	LB089762.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	82
			TRH C6-C9	mg/kg	20	<20	<20	23.2	65
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	6.2	5.0	-	124
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.1	6.0	-	101
			d8-toluene (Surrogate)	mg/kg	-	4.9	4.5	-	98
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.1	4.2	-	82
		VPH F	Benzene (F0)	mg/kg	0.1	2.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	84

MATRIX SPIKE DUPLICATES

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.

No matrix spike duplicates were required for this job.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	NATA accreditation does not cover tthe performance of this service.
-	Sample not analysed for this analyte.
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.
②	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.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	13

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE145989 R0**
Date Received	13 Nov 2015
Date Reported	23 Nov 2015

COMMENTS

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

No respirable fibres detected in all samples using trace analysis technique.

Samples #1, 3, 5, 7, 9, 11, 14-20 were ashed after initial stereo microscope examination, re-examined and trace analysis performed on samples where asbestos has not been detected.
No trace asbestos fibres detected using trace analysis technique.

Asbestos analysed by Approved Identifier Ravee Sivasubramaniam .

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SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst/Hygiene Team Leader

ANALYTICAL REPORT

SE145989 R0

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	Est.%w/w*
SE145989.001	T_1_ESMW01_0.1	Soil	100g Clay	10 Nov 2015	No Asbestos Found	<0.01
SE145989.003	T_5_ESMW06_0.1	Soil	113g Clay, Soil, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.005	T_5_ESSB03_0.1	Soil	112g Clay, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.007	T_5_ESSB04_0.1	Soil	88g Clay, Soil, Rocks	10 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE145989.009	T_5_ESMW04_0.1	Soil	99g Clay, Sand	10 Nov 2015	No Asbestos Found	<0.01
SE145989.011	T_5_ESMW03_0.1	Soil	118g Clay, Soil, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.014	T_4_SP01A	Soil	83g Sand, Soil, Rocks	10 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE145989.015	T_4_SP01B	Soil	84g Clay, Soil, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.016	T_6_SP02A	Soil	137g Clay, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.017	T_6_SP02B	Soil	136g Sand, Soil, Rocks	10 Nov 2015	No Asbestos Found	<0.01
SE145989.018	T_7_SP03A	Soil	137g Sand, Soil, Rocks	10 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE145989.019	T_7_SP03B	Soil	83g Clay, Sand, Soil	10 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE145989.020	T_7_SP03C	Soil	94g Sand, Soil	10 Nov 2015	No Asbestos Found	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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source: M630_SR_20151113174344.pdf page: 1 SGS Ref: SE145989_COC

CHAIN OF CUSTODY

Environmental
PROVIDING BENEFITS

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
Sampler: RH
Address: Suite 15201, 2 Locomotive Street
Eveleigh NSW 2065
Phone: (02) 9690 2555 **Mob:** 0434 657 155
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report)
accounts@environmentalstrategies.com.au (invoice)
natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required															Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	8 Metals	PAHs	TRH	BTEX	VOCs	PCBs	Nutrients	Salinity	Asbestos	OCP	OP	F&TC	E Coli	TOC (combustion)	Grain Size Analysis	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
1	T_1_ESMW01_0.1	0.1	10.11.15	Soil	x	x	x	x	x				x														1	
	T_1_ESMW01_0.5	0.5	10.11.15	Soil																x							1	
2	T_1_ESMW01_1.0	1	10.11.15	Soil	x	x	x	x																			1	
	T_1_ESMW01_2.0	2	10.11.15	Soil																x							1	
	T_1_ESMW01_3.0	3	10.11.15	Soil																x							1	
3	T_5_ESMW06_0.1	0.1	10.11.15	Soil	x	x	x	x		x			x														1	
	T_5_ESMW06_0.5	0.5	10.11.15	Soil																x							1	
	T_5_ESMW06_1.0	1	10.11.15	Soil																x							1	
4	T_5_ESMW06_1.4	1.4	10.11.15	Soil	x	x	x	x		x																	1	
5	T_5_ESSB03_0.1	0.1	10.11.15	Soil	x	x	x	x		x			x														1	
	T_5_ESSB03_0.5	0.5	10.11.15	Soil																x							1	
6	T_5_ESSB03_1.0	1	10.11.15	Soil	x	x	x	x		x																	1	
	T_5_ESSB03_2.0	2	10.11.15	Soil																x							1	
7	T_5_ESSB04_0.1	0.1	10.11.15	Soil	x	x	x	x		x			x														1	
	T_5_ESSB04_0.5	0.5	10.11.15	Soil																x							1	
8	T_5_ESSB04_1.0	1	10.11.15	Soil	x	x	x	x	x	x																	1	
	T_5_ESSB04_2.0	2	10.11.15	Soil																x							1	
	T_5_ESSB04_2.7	2.7	10.11.15	Soil																x							1	
9	T_5_ESMW04_0.1	0.1	10.11.15	Soil	x	x	x	x	x	x			x														1	
	T_5_ESMW04_0.5	0.5	10.11.15	Soil																x							1	
	T_5_ESMW04_1.0	1	10.11.15	Soil																x							1	
10	T_5_ESMW04_2.0	2	10.11.15	Soil	x	x	x	x		x																	1	
	T_5_ESMW04_3.0	3	10.11.15	Soil																x							1	
11	T_3_ESMW03_0.1	0.1	10.11.15	Soil	x	x	x	x	x	x			x														1	
	T_3_ESMW03_0.5	0.5	10.11.15	Soil																x							1	
	T_3_ESMW03_1.0	1	10.11.15	Soil																x							1	
12	T_3_ESMW03_2.0	2	10.11.15	Soil	x	x	x	x		x																	1	
	T_3_ESMW03_3.0	3	10.11.15	Soil																x							1	
13	DUPJO101115		10.11.15	Soil	x	x	x	x																			1	

SGS Alexandria Environmental
SE145989 COC
Received: 13 – Nov – 2015

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 13.11.15
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature

Received by (primary lab): SGS Sydney
Print Name: TOMMY
Date & Time: 13.11.15 1.20 pm
Signature

Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 4.8°C
Transported by: Hand delivered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

CHAIN OF CUSTODY

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natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

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6. All triplicate samples to be sent to Envirolab

SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (M10)	PAHs	TRH	BTEX	VOCs	PCBs	Nutrients	Salinity	Asbestos	TOC (combustion)	Grain Size Analysis	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Comments: Provide as much information about the sample as you can
14	T_4_SP01A		10.11.15	Soil	X	X	X	X	X	X			X										1	
15	T_4_SP01B		10.11.15	Soil	X	X	X	X	X	X			X										1	
16	T_6_SP02A		10.11.15	Soil	X	X	X	X	X	X			X										1	
17	T_6_SP02B		10.11.15	Soil	X	X	X	X	X	X			X										1	
18	T_7_SP03A		10.11.15	Soil	X	X	X	X	X	X			X										1	
19	T_7_SP03B		10.11.15	Soil	X	X	X	X	X	X			X										1	
20	T_7_SP03C		10.11.15	Soil	X	X	X	X	X	X			X										1	
21	DUPJO111115		10.11.15	Soil	X	X	X	X															1	
21	Trip Spike			Soil				X									1							Laboratory Supplied
22	Trip Blank			Soil				X															1	Laboratory Supplied

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 13.11.15
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature

Received by (primary lab): SGS Sydney
Print Name: TOMMY
Date & Time: 13-11-15 1:20pm
Signature Tommy P.

Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 4.8°C
Transported by: Hand delivered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

CHAIN OF CUSTODY

Environmental
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Client: Environmental Strategies
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natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

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					Tests Required															Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	8 Metals	PAHs	TRH	BTEX	VOCs	PCBs	Nutrients	Salinity	Asbestos	OCP	OP	F&TC	E Coli	TOC (combustion)	Grain Size Analysis	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
23	T_2_ESMW02_0.1	0.1	11.11.15	Soil	x	x	x	x	x	x			x	x	x													
24	T_2_ESMW02_0.5	0.5	11.11.15	Soil	x	x	x	x		x																	1	~~Analyse from soil extract if sample is over holding time~~
	T__2ESMW02_1.0	1	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
	T_2_ESMW02_2.0	2	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
	T_2_ESMW02_3.0	3	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
25	T_2_ESSB01_0.1	0.1	11.11.15	Soil	x	x	x	x	x	x			x	x	x												1	~~Analyse from soil extract if sample is over holding time~~
	T_2_ESSB01_0.5	0.5	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
26	T_2_ESSB01_1.0	1	11.11.15	Soil	x	x	x	x		x																	1	~~Analyse from soil extract if sample is over holding time~~
	T_2_ESSB01_2.0	2	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
	T_2_ESSB01_3.0	3	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
27	T_ESSB05_0.1	0.1	11.11.15	Soil	x	x	x	x		x			x	x	x												1	~~Analyse from soil extract if sample is over holding time~~
	T_ESSB05_0.5	0.5	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
	T_ESSB05_1.0	1	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
	T_ESSB05_2.0	2	11.11.15	Soil																x							1	~~Analyse from soil extract if sample is over holding time~~
28	T_ESSB05_3.0	3	11.11.15	Soil	x	x	x	x		x																	1	
29	DUPJO111115		11.11.15	Soil	x	x	x	x		x										x							1	

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 13.11.15
Signature

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Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
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Received by (primary lab): SGS Sydney
Print Name: TOMMY
Date & Time: 13.11.15 1:20pm
Signature Tommy D.

Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 4.8°C
Transported by: Hand/delivered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

SAMPLE RECEIPT ADVICE

SE145989

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street Eveleigh NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	29

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 13/11/2015
Report Due	Fri 20/11/2015
SGS Reference	**SE145989**

SUBMISSION DETAILS

This is to confirm that 29 samples were received on Friday 13/11/2015. Results are expected to be ready by Friday 20/11/2015. Please quote SGS reference SE145989 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	29 Soil	Type of documentation received	COC
Date documentation received	13/11/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	4.8°C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

PRIVILEGED AND CONFIDENTIAL
`Not to be distributed or disclosed to any person other than Environmental Strategies'
25 soil samples unmarked for analyses on the COC have been placed on hold.
Asbestos will be sub sampled from the jar provided, as a separate bag was not supplied for analysis.
PCB analyte Arochlor 1242 and Arochlor 1254 LOR set to 0.1, due to client requirement.

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS , all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx as at the date of this document.
Attention is drawn to the limitations of liability and to the clauses of indemnification.

SAMPLE RECEIPT ADVICE

SE145989

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Metals in Soil by ICPOES	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	T_1_ESMW01_0.1	1	25	-	7	10	79	8
002	T_1_ESMW01_1.0	1	25	-	7	10	12	8
003	T_5_ESMW06_0.1	1	25	11	7	10	12	8
004	T_5_ESMW06_1.4	1	25	11	7	10	12	8
005	T_5_ESSB03_0.1	1	25	11	7	10	12	8
006	T_5_ESSB03_1.0	1	25	11	7	10	12	8
007	T_5_ESSB04_0.1	1	25	11	7	10	12	8
008	T_5_ESSB04_1.0	1	25	11	7	10	79	8
009	T_5_ESMW04_0.1	1	25	11	7	10	79	8
010	T_5_ESMW04_2.0	1	25	11	7	10	12	8
011	T_5_ESMW03_0.1	1	25	11	7	10	79	8
012	T_5_ESMW03_2.0	1	25	11	7	10	12	8
013	DUPJO101115	1	25	-	7	10	12	8
014	T_4_SP01A	1	25	11	7	10	79	8
015	T_4_SP01B	1	25	11	7	10	79	8
016	T_6_SP02A	1	25	11	7	10	79	8
017	T_6_SP02B	1	25	11	7	10	79	8
018	T_7_SP03A	1	25	11	7	10	79	8
019	T_7_SP03B	1	25	11	7	10	79	8
020	T_7_SP03C	1	25	11	7	10	79	8
021	Tripspike	-	-	-	-	-	12	-
022	Tripblank	-	-	-	-	-	12	-
023	T_2_ESMW02_0.1	1	25	11	7	10	79	8
024	T_2_ESMW02_0.5	1	25	11	7	10	12	8

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

SE145989

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	Total Recoverable Metals in Soil by ICPOES	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	T_2_ESSB01_0.1	1	25	11	7	10	79	8
026	T_2_ESSB01_1.0	1	25	11	7	10	12	8
027	T_ESSB05_0.1	1	25	11	7	10	12	8
028	T_ESSB05_3.0	1	25	11	7	10	12	8
029	DUPJO111115	1	25	11	7	10	12	8

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE145989

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Moisture Content
001	T_1_ESMW01_0.1	2	1
002	T_1_ESMW01_1.0	-	1
003	T_5_ESMW06_0.1	2	1
004	T_5_ESMW06_1.4	-	1
005	T_5_ESSB03_0.1	2	1
006	T_5_ESSB03_1.0	-	1
007	T_5_ESSB04_0.1	2	1
008	T_5_ESSB04_1.0	-	1
009	T_5_ESMW04_0.1	2	1
010	T_5_ESMW04_2.0	-	1
011	T_5_ESMW03_0.1	2	1
012	T_5_ESMW03_2.0	-	1
013	DUPJO101115	-	1
014	T_4_SP01A	2	1
015	T_4_SP01B	2	1
016	T_6_SP02A	2	1
017	T_6_SP02B	2	1
018	T_7_SP03A	2	1
019	T_7_SP03B	2	1
020	T_7_SP03C	2	1
022	Tripblank	-	1
023	T_2_ESMW02_0.1	-	1
024	T_2_ESMW02_0.5	-	1

CONTINUED OVERLEAF

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

SAMPLE RECEIPT ADVICE

SE145989

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED

Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Moisture Content
025	T_2_ESSB01_0.1	1
026	T_2_ESSB01_1.0	1
027	T_ESSB05_0.1	1
028	T_ESSB05_3.0	1
029	DUPJO111115	1

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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	50

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE146247 R0**
Date Received	20/11/2015
Date Reported	2/12/2015

COMMENTS

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

No respirable fibres detected in all samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied.
SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .

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`Not to be distributed or disclosed to any person other than Environmental Strategies'
Job activated after the recommended maximum holding time had elapsed.
Micro subcontracted to Sonic Food & Water Testing, 31-33 Lawson Street Penrith NSW 2750, NATA Accreditation Number: 4034.
TOC (combustion) subcontracted to SGS Perth Environmental, 28 Reid Rd Perth

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst/Hygiene Team Leader

VOC's in Soil [AN433/AN434] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	15	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	<1	<1	<1	<1
Chloromethane	mg/kg	1	<1	<1	<1	<1	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromomethane	mg/kg	1	<1	<1	<1	<1	<1
Chloroethane	mg/kg	1	<1	<1	<1	<1	<1
Trichlorofluoromethane	mg/kg	1	<1	<1	<1	<1	<1
Acetone (2-propanone)	mg/kg	10	<10	<10	<10	<10	<10
Iodomethane	mg/kg	5	<5	<5	<5	<5	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Allyl chloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Vinyl acetate	mg/kg	10	<10	<10	<10	<10	<10
MEK (2-butanone)	mg/kg	10	<10	<10	<10	<10	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chloroform	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-nitropropane	mg/kg	10	<10	<10	<10	<10	<10
Bromodichloromethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	<1	<1	<1	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorodibromomethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-hexanone (MBK)	mg/kg	5	<5	<5	<5	<5	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromoform	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	<1	<1	<1	<1

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Bromobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-propylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	<1	-
Chloromethane	mg/kg	1	-	<1	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromomethane	mg/kg	1	-	<1	-	<1	-
Chloroethane	mg/kg	1	-	<1	-	<1	-
Trichlorofluoromethane	mg/kg	1	-	<1	-	<1	-
Acetone (2-propanone)	mg/kg	10	-	<10	-	<10	-
Iodomethane	mg/kg	5	-	<5	-	<5	-
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
Acrylonitrile	mg/kg	0.1	-	<0.1	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	<0.5	-
Allyl chloride	mg/kg	0.1	-	<0.1	-	<0.1	-
Carbon disulfide	mg/kg	0.5	-	<0.5	-	<0.5	-
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Vinyl acetate	mg/kg	10	-	<10	-	<10	-
MEK (2-butanone)	mg/kg	10	-	<10	-	<10	-
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromochloromethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chloroform	mg/kg	0.1	-	<0.1	-	<0.1	-
2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	<0.1	-
Dibromomethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	<0.1	-	<0.1	-
2-nitropropane	mg/kg	10	-	<10	-	<10	-
Bromodichloromethane	mg/kg	0.1	-	<0.1	-	<0.1	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	-	<1	-
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	<0.1	-	<0.1	-
2-hexanone (MBK)	mg/kg	5	-	<5	-	<5	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromoform	mg/kg	0.1	-	<0.1	-	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
n-propylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
n-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-	<1	-	<1
Chloromethane	mg/kg	1	<1	-	<1	-	<1
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Bromomethane	mg/kg	1	<1	-	<1	-	<1
Chloroethane	mg/kg	1	<1	-	<1	-	<1
Trichlorofluoromethane	mg/kg	1	<1	-	<1	-	<1
Acetone (2-propanone)	mg/kg	10	<10	-	<10	-	<10
Iodomethane	mg/kg	5	<5	-	<5	-	<5
1,1-dichloroethene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Acrylonitrile	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-	<0.5	-	<0.5
Allyl chloride	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Carbon disulfide	mg/kg	0.5	<0.5	-	<0.5	-	<0.5
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1-dichloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Vinyl acetate	mg/kg	10	<10	-	<10	-	<10
MEK (2-butanone)	mg/kg	10	<10	-	<10	-	<10
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Bromochloromethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Chloroform	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
2,2-dichloropropane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2-dichloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1-dichloropropene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Carbon tetrachloride	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Dibromomethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2-dichloropropane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
2-nitropropane	mg/kg	10	<10	-	<10	-	<10
Bromodichloromethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-	<1	-	<1
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,3-dichloropropane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Chlorodibromomethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
2-hexanone (MBK)	mg/kg	5	<5	-	<5	-	<5
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Chlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Bromoform	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-	<1	-	<1
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-	<1	-	<1

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Bromobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
n-propylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
2-chlorotoluene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
4-chlorotoluene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
tert-butylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
sec-butylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
p-isopropyltoluene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
n-butylbenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Hexachlorobutadiene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-	<0.1	-	<0.1
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	<1	-
Chloromethane	mg/kg	1	-	<1	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromomethane	mg/kg	1	-	<1	-	<1	-
Chloroethane	mg/kg	1	-	<1	-	<1	-
Trichlorofluoromethane	mg/kg	1	-	<1	-	<1	-
Acetone (2-propanone)	mg/kg	10	-	<10	-	<10	-
Iodomethane	mg/kg	5	-	<5	-	<5	-
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
Acrylonitrile	mg/kg	0.1	-	<0.1	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	<0.5	-
Allyl chloride	mg/kg	0.1	-	<0.1	-	<0.1	-
Carbon disulfide	mg/kg	0.5	-	<0.5	-	<0.5	-
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Vinyl acetate	mg/kg	10	-	<10	-	<10	-
MEK (2-butanone)	mg/kg	10	-	<10	-	<10	-
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromochloromethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chloroform	mg/kg	0.1	-	<0.1	-	<0.1	-
2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	<0.1	-
Dibromomethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	<0.1	-	<0.1	-
2-nitropropane	mg/kg	10	-	<10	-	<10	-
Bromodichloromethane	mg/kg	0.1	-	<0.1	-	<0.1	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	-	<1	-
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chlorodibromomethane	mg/kg	0.1	-	<0.1	-	<0.1	-
2-hexanone (MBK)	mg/kg	5	-	<5	-	<5	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
Chlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromoform	mg/kg	0.1	-	<0.1	-	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	<0.1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	<1	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	<0.1	-
Bromobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
n-propylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
n-butylbenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	<0.1	-
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	Trip Blank SOIL - 16/11/2015 SE146247.045	Trip Spike SOIL - 16/11/2015 SE146247.046
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[88%]
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[86%]
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[81%]
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	[85%]
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	[84%]
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	-
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	-
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	-
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	<1	-	-	-
Chloromethane	mg/kg	1	-	<1	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	<0.1	-	-	-
Bromomethane	mg/kg	1	-	<1	-	-	-
Chloroethane	mg/kg	1	-	<1	-	-	-
Trichlorofluoromethane	mg/kg	1	-	<1	-	-	-
Acetone (2-propanone)	mg/kg	10	-	<10	-	-	-
Iodomethane	mg/kg	5	-	<5	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	<0.1	-	-	-
Acrylonitrile	mg/kg	0.1	-	<0.1	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	<0.5	-	-	-
Allyl chloride	mg/kg	0.1	-	<0.1	-	-	-
Carbon disulfide	mg/kg	0.5	-	<0.5	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	<0.1	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	<0.1	-	-	-
Vinyl acetate	mg/kg	10	-	<10	-	-	-
MEK (2-butanone)	mg/kg	10	-	<10	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	<0.1	-	-	-
Bromochloromethane	mg/kg	0.1	-	<0.1	-	-	-
Chloroform	mg/kg	0.1	-	<0.1	-	-	-
2,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	<0.1	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	<0.1	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	<0.1	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	<0.1	-	-	-
Dibromomethane	mg/kg	0.1	-	<0.1	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	<0.1	-	-	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	-	<0.1	-	-	-
2-nitropropane	mg/kg	10	-	<10	-	-	-
Bromodichloromethane	mg/kg	0.1	-	<0.1	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	<1	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	<0.1	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	<0.1	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	<0.1	-	-	-
Chlorodibromomethane	mg/kg	0.1	-	<0.1	-	-	-
2-hexanone (MBK)	mg/kg	5	-	<5	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	<0.1	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	<0.1	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-	-
Chlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
Bromoform	mg/kg	0.1	-	<0.1	-	-	-
cis-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	<0.1	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	<0.1	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	<0.1	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	<1	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	Trip Blank SOIL - 16/11/2015 SE146247.045	Trip Spike SOIL - 16/11/2015 SE146247.046
Isopropylbenzene (Cumene)	mg/kg	0.1	-	<0.1	-	-	-
Bromobenzene	mg/kg	0.1	-	<0.1	-	-	-
n-propylbenzene	mg/kg	0.1	-	<0.1	-	-	-
2-chlorotoluene	mg/kg	0.1	-	<0.1	-	-	-
4-chlorotoluene	mg/kg	0.1	-	<0.1	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	<0.1	-	-	-
tert-butylbenzene	mg/kg	0.1	-	<0.1	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	<0.1	-	-	-
sec-butylbenzene	mg/kg	0.1	-	<0.1	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	<0.1	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
n-butylbenzene	mg/kg	0.1	-	<0.1	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	<0.1	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	<0.1	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	<0.1	-	-	-
Total VOC*	mg/kg	24	-	-	-	-	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene	mg/kg	0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	-
Chloromethane	mg/kg	1	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	-
Bromomethane	mg/kg	1	<1	-
Chloroethane	mg/kg	1	<1	-
Trichlorofluoromethane	mg/kg	1	<1	-
Acetone (2-propanone)	mg/kg	10	<10	-
Iodomethane	mg/kg	5	<5	-
1,1-dichloroethene	mg/kg	0.1	<0.1	-
Acrylonitrile	mg/kg	0.1	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	-
Allyl chloride	mg/kg	0.1	<0.1	-
Carbon disulfide	mg/kg	0.5	<0.5	-
trans-1,2-dichloroethene	mg/kg	0.1	<0.1	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	-
1,1-dichloroethane	mg/kg	0.1	<0.1	-
Vinyl acetate	mg/kg	10	<10	-
MEK (2-butanone)	mg/kg	10	<10	-
cis-1,2-dichloroethene	mg/kg	0.1	<0.1	-
Bromochloromethane	mg/kg	0.1	<0.1	-
Chloroform	mg/kg	0.1	<0.1	-
2,2-dichloropropane	mg/kg	0.1	<0.1	-
1,2-dichloroethane	mg/kg	0.1	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	<0.1	-
1,1-dichloropropene	mg/kg	0.1	<0.1	-
Carbon tetrachloride	mg/kg	0.1	<0.1	-
Dibromomethane	mg/kg	0.1	<0.1	-
1,2-dichloropropane	mg/kg	0.1	<0.1	-
Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1	-
2-nitropropane	mg/kg	10	<10	-
Bromodichloromethane	mg/kg	0.1	<0.1	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	-
cis-1,3-dichloropropene	mg/kg	0.1	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	<0.1	-
1,3-dichloropropane	mg/kg	0.1	<0.1	-
Chlorodibromomethane	mg/kg	0.1	<0.1	-
2-hexanone (MBK)	mg/kg	5	<5	-
1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	-
Chlorobenzene	mg/kg	0.1	<0.1	-
Bromoform	mg/kg	0.1	<0.1	-
cis-1,4-dichloro-2-butene	mg/kg	1	<1	-
Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	<1	-

VOC's in Soil [AN433/AN434] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	-
Bromobenzene	mg/kg	0.1	<0.1	-
n-propylbenzene	mg/kg	0.1	<0.1	-
2-chlorotoluene	mg/kg	0.1	<0.1	-
4-chlorotoluene	mg/kg	0.1	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	-
tert-butylbenzene	mg/kg	0.1	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	-
sec-butylbenzene	mg/kg	0.1	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	<0.1	-
p-isopropyltoluene	mg/kg	0.1	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	<0.1	-
n-butylbenzene	mg/kg	0.1	<0.1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	-
Total VOC*	mg/kg	24	-	-

Volatile Petroleum Hydrocarbons in Soil [AN433/AN434/AN410] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
TRH C10-C14	mg/kg	20	<20	<20	<20	33	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	740	190
TRH C29-C36	mg/kg	45	<45	<45	<45	300	280
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	69	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	54	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	940	370
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	130
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	1100	470
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	1100	470

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
TRH C10-C14	mg/kg	20	**49**	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	**400**	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16 (F2)	mg/kg	25	**300**	<25	<25	<25	<25
TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	**290**	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	**190**	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	**500**	<110	<110	<110	<110
TRH C10-C40 Total	mg/kg	210	**500**	<210	<210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	8.4	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	3.9	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	2.9	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	1.3	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	8.3	0.3
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	8.4	0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	110	2.4
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	20	0.6
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	98	6.3
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	76	6.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	14	7.9
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	12	3.9
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	41	13
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	13	3.6
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	34	9.8
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	14	7.4
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	2.2	1.5
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	12	6.3
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	45	15
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	45	15
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	45	15
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	480	69

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	**0.7**	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	**0.6**	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	**0.3**	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	**0.2**	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	**0.5**	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	**0.4**	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	**3.2**	<0.8	<0.8	<0.8	<0.8

OC Pesticides in Soil [AN400/AN420] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN400/AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
trans-Nonachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Endrin	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
o,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin Ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Isodrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OP Pesticides in Soil [AN400/AN420] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

PARAMETER	UOM	LOR	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

PARAMETER	UOM	LOR	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

OP Pesticides in Soil [AN400/AN420] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Dichlorvos	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dimethoate	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Fenitrothion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Malathion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Methidathion	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethion	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2

PCBs in Soil [AN400/AN420] Tested: 24/11/2015

PARAMETER	UOM	LOR	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026
Arochlor 1016	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1221	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1232	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1242	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1248	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1254	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1260	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1262	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Arochlor 1268	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2
Total PCBs (Arochlors)	mg/kg	1	<1	<1	<1	<1

Fluoride in Soil (Water Soluble 1:5 Extraction) by ISE [AN141] Tested: 1/12/2015

PARAMETER	UOM	LOR	DUPGS181115 SOIL - 18/11/2015 SE146247.003	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010
Water Soluble Fluoride*	mg/kg	0.5	1.7	2.0	48	<0.5	<0.5

PARAMETER	UOM	LOR	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
Water Soluble Fluoride*	mg/kg	0.5	1.6	<0.5	<0.5	<0.5	1.9

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
Water Soluble Fluoride*	mg/kg	0.5	<0.5	1.2	0.7	3.4	<0.5

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_2_SG01 SOIL - 17/11/2015 SE146247.027	T_2_SG02 SOIL - 17/11/2015 SE146247.028	T_2_SG03 SOIL - 17/11/2015 SE146247.029
Water Soluble Fluoride*	mg/kg	0.5	9.2	<0.5	1.7	4.9	2.2

PARAMETER	UOM	LOR	T_2_SG04 SOIL - 17/11/2015 SE146247.030	T_2_SG05 SOIL - 19/11/2015 SE146247.031	T_SG01 SOIL - 18/11/2015 SE146247.032	T_SG02 SOIL - 18/11/2015 SE146247.033	T_SG03 SOIL - 18/11/2015 SE146247.034
Water Soluble Fluoride*	mg/kg	0.5	2.7	8.3	1.0	2.5	1.0

PARAMETER	UOM	LOR	T_SG04 SOIL - 18/11/2015 SE146247.035	T_SG05 SOIL - 18/11/2015 SE146247.036	T_SG06 SOIL - 18/11/2015 SE146247.037	T_SG07 SOIL - 18/11/2015 SE146247.038	T_SG08 SOIL - 19/11/2015 SE146247.039
Water Soluble Fluoride*	mg/kg	0.5	1.9	2.3	2.7	2.8	3.6

PARAMETER	UOM	LOR	T_SG09 SOIL - 19/11/2015 SE146247.040	T_SG10 SOIL - 19/11/2015 SE146247.041	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Water Soluble Fluoride*	mg/kg	0.5	2.3	1.4	0.7	0.7

Total Recoverable Metals in Soil by ICPOES [AN040/AN320] Tested: 27/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPGS181115 SOIL - 18/11/2015 SE146247.003	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007
Arsenic, As	mg/kg	3	5	3	-	<3	5
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	-	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	5.0	4.6	-	5.5	6.7
Copper, Cu	mg/kg	0.5	1.4	1.7	-	0.7	3.9
Lead, Pb	mg/kg	1	9	9	16	3	10
Nickel, Ni	mg/kg	0.5	<0.5	0.8	-	<0.5	1.9
Zinc, Zn	mg/kg	0.5	5.9	10	-	1.3	20
Selenium, Se	mg/kg	3	<3	<3	-	<3	<3
Boron, B	mg/kg	5	<5	<5	-	<5	<5

PARAMETER	UOM	LOR	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012
Arsenic, As	mg/kg	3	4	7	<3	<3	<3
Cadmium, Cd	mg/kg	0.3	0.6	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	24	9.1	13	8.4	11
Copper, Cu	mg/kg	0.5	11	0.6	0.6	0.6	4.8
Lead, Pb	mg/kg	1	38	7	12	2	27
Nickel, Ni	mg/kg	0.5	6.6	<0.5	1.5	0.7	2.3
Zinc, Zn	mg/kg	0.5	120	2.4	3.3	2.2	30
Selenium, Se	mg/kg	3	<3	<3	<3	<3	<3
Boron, B	mg/kg	5	<5	<5	<5	<5	<5

PARAMETER	UOM	LOR	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017
Arsenic, As	mg/kg	3	6	4	<3	3	<3
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	19	15	4.0	5.6	4.2
Copper, Cu	mg/kg	0.5	<0.5	0.6	1.0	0.7	0.6
Lead, Pb	mg/kg	1	13	14	6	7	5
Nickel, Ni	mg/kg	0.5	1.2	0.9	0.6	<0.5	<0.5
Zinc, Zn	mg/kg	0.5	3.2	3.9	5.3	3.0	1.4
Selenium, Se	mg/kg	3	<3	<3	<3	<3	<3
Boron, B	mg/kg	5	<5	<5	<5	<5	<5

PARAMETER	UOM	LOR	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022
Arsenic, As	mg/kg	3	4	4	8	<3	<3
Cadmium, Cd	mg/kg	0.3	0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.3	19	24	28	13	2.2
Copper, Cu	mg/kg	0.5	2.9	0.7	12	17	5.8
Lead, Pb	mg/kg	1	18	11	15	14	9
Nickel, Ni	mg/kg	0.5	2.0	0.9	9.1	3.8	1.5
Zinc, Zn	mg/kg	0.5	22	3.3	34	11	32
Selenium, Se	mg/kg	3	<3	<3	<3	<3	<3
Boron, B	mg/kg	5	<5	<5	<5	<5	<5

Total Recoverable Metals in Soil by ICPOES [AN040/AN320] Tested: 27/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_2_SG01 SOIL - 17/11/2015 SE146247.027
Arsenic, As	mg/kg	3	<3	6	<3	<3	-
Cadmium, Cd	mg/kg	0.3	<0.3	0.5	<0.3	<0.3	-
Chromium, Cr	mg/kg	0.3	2.3	20	15	2.3	-
Copper, Cu	mg/kg	0.5	<0.5	21	3.8	2.4	-
Lead, Pb	mg/kg	1	<1	63	6	7	27
Nickel, Ni	mg/kg	0.5	0.9	11	4.7	<0.5	-
Zinc, Zn	mg/kg	0.5	1.5	130	11	2.1	-
Selenium, Se	mg/kg	3	<3	<3	<3	<3	-
Boron, B	mg/kg	5	<5	<5	<5	<5	-

PARAMETER	UOM	LOR	T_2_SG02 SOIL - 17/11/2015 SE146247.028	T_2_SG03 SOIL - 17/11/2015 SE146247.029	T_2_SG04 SOIL - 17/11/2015 SE146247.030	T_2_SG05 SOIL - 19/11/2015 SE146247.031	T_SG01 SOIL - 18/11/2015 SE146247.032
Arsenic, As	mg/kg	3	-	-	-	-	-
Cadmium, Cd	mg/kg	0.3	-	-	-	-	-
Chromium, Cr	mg/kg	0.3	-	-	-	-	-
Copper, Cu	mg/kg	0.5	-	-	-	-	-
Lead, Pb	mg/kg	1	40	3	15	50	19
Nickel, Ni	mg/kg	0.5	-	-	-	-	-
Zinc, Zn	mg/kg	0.5	-	-	-	-	-
Selenium, Se	mg/kg	3	-	-	-	-	-
Boron, B	mg/kg	5	-	-	-	-	-

PARAMETER	UOM	LOR	T_SG02 SOIL - 18/11/2015 SE146247.033	T_SG03 SOIL - 18/11/2015 SE146247.034	T_SG04 SOIL - 18/11/2015 SE146247.035	T_SG05 SOIL - 18/11/2015 SE146247.036	T_SG06 SOIL - 18/11/2015 SE146247.037
Arsenic, As	mg/kg	3	-	-	-	-	-
Cadmium, Cd	mg/kg	0.3	-	-	-	-	-
Chromium, Cr	mg/kg	0.3	-	-	-	-	-
Copper, Cu	mg/kg	0.5	-	-	-	-	-
Lead, Pb	mg/kg	1	21	17	19	18	21
Nickel, Ni	mg/kg	0.5	-	-	-	-	-
Zinc, Zn	mg/kg	0.5	-	-	-	-	-
Selenium, Se	mg/kg	3	-	-	-	-	-
Boron, B	mg/kg	5	-	-	-	-	-

PARAMETER	UOM	LOR	T_SG07 SOIL - 18/11/2015 SE146247.038	T_SG08 SOIL - 19/11/2015 SE146247.039	T_SG09 SOIL - 19/11/2015 SE146247.040	T_SG10 SOIL - 19/11/2015 SE146247.041	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049
Arsenic, As	mg/kg	3	-	-	-	-	5
Cadmium, Cd	mg/kg	0.3	-	-	-	-	<0.3
Chromium, Cr	mg/kg	0.3	-	-	-	-	22
Copper, Cu	mg/kg	0.5	-	-	-	-	9.9
Lead, Pb	mg/kg	1	17	15	17	12	10
Nickel, Ni	mg/kg	0.5	-	-	-	-	7.4
Zinc, Zn	mg/kg	0.5	-	-	-	-	27
Selenium, Se	mg/kg	3	-	-	-	-	<3
Boron, B	mg/kg	5	-	-	-	-	<5

Total Recoverable Metals in Soil by ICPOES [AN040/AN320] Tested: 27/11/2015 (continued)

PARAMETER	UOM	LOR	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Arsenic, As	mg/kg	3	<3
Cadmium, Cd	mg/kg	0.3	<0.3
Chromium, Cr	mg/kg	0.3	**6.4**
Copper, Cu	mg/kg	0.5	**9.7**
Lead, Pb	mg/kg	1	**6**
Nickel, Ni	mg/kg	0.5	**1.8**
Zinc, Zn	mg/kg	0.5	**5.8**
Selenium, Se	mg/kg	3	<3
Boron, B	mg/kg	5	<5

Mercury in Soil [AN312] Tested: 30/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008
Mercury	mg/kg	0.01	<0.01	<0.01	<0.01	<0.01	0.02

PARAMETER	UOM	LOR	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013
Mercury	mg/kg	0.01	<0.01	<0.01	<0.01	0.01	<0.01

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018
Mercury	mg/kg	0.01	<0.01	<0.01	<0.01	0.01	0.02

PARAMETER	UOM	LOR	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023
Mercury	mg/kg	0.01	<0.01	0.02	<0.01	<0.01	0.01

PARAMETER	UOM	LOR	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
Mercury	mg/kg	0.01	0.05	0.01	<0.01	0.01	<0.01

Moisture Content [AN002] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115 SEDIMENT - 16/11/2015 SE146247.001	T_6_SD01 SEDIMENT - 16/11/2015 SE146247.002	DUPGS181115 SOIL - 18/11/2015 SE146247.003	DUPJO181115 SOIL - 18/11/2015 SE146247.004	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007
% Moisture	%w/w	0.5	33	26	21	17	15

PARAMETER	UOM	LOR	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_2_ESSB02_2 SOIL - 17/11/2015 SE146247.009	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW07_2 SOIL - 16/11/2015 SE146247.011	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012
% Moisture	%w/w	0.5	16	19	21	20	24

PARAMETER	UOM	LOR	T_ESMW08_1 SOIL - 16/11/2015 SE146247.013	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW09_2 SOIL - 16/11/2015 SE146247.015	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESMW10_1 SOIL - 18/11/2015 SE146247.017
% Moisture	%w/w	0.5	22	25	19	19	15

PARAMETER	UOM	LOR	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018	T_ESSB06_1 SOIL - 16/11/2015 SE146247.019	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022
% Moisture	%w/w	0.5	22	21	35	33	7.8

PARAMETER	UOM	LOR	T_ESSB10_1 SOIL - 19/11/2015 SE146247.023	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_SB07_0.5 SOIL - 18/11/2015 SE146247.025	T_5_ESMW05_2 SOIL - 17/11/2015 SE146247.026	T_2_SG01 SOIL - 17/11/2015 SE146247.027
% Moisture	%w/w	0.5	4.1	51	18	11	27

PARAMETER	UOM	LOR	T_2_SG02 SOIL - 17/11/2015 SE146247.028	T_2_SG03 SOIL - 17/11/2015 SE146247.029	T_2_SG04 SOIL - 17/11/2015 SE146247.030	T_2_SG05 SOIL - 19/11/2015 SE146247.031	T_SG01 SOIL - 18/11/2015 SE146247.032
% Moisture	%w/w	0.5	27	16	21	16	23

PARAMETER	UOM	LOR	T_SG02 SOIL - 18/11/2015 SE146247.033	T_SG03 SOIL - 18/11/2015 SE146247.034	T_SG04 SOIL - 18/11/2015 SE146247.035	T_SG05 SOIL - 18/11/2015 SE146247.036	T_SG06 SOIL - 18/11/2015 SE146247.037
% Moisture	%w/w	0.5	26	27	29	26	24

Moisture Content [AN002] Tested: 24/11/2015 (continued)

PARAMETER	UOM	LOR	T_SG07 SOIL - 18/11/2015 SE146247.038	T_SG08 SOIL - 19/11/2015 SE146247.039	T_SG09 SOIL - 19/11/2015 SE146247.040	T_SG10 SOIL - 19/11/2015 SE146247.041	Trip Blank SOIL - 16/11/2015 SE146247.045
% Moisture	%w/w	0.5	22	23	29	20	<0.5

PARAMETER	UOM	LOR	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049	T_ESSB08_1 SOIL - 18/11/2015 SE146247.050
% Moisture	%w/w	0.5	29	30

Fibre Identification in soil [AN602] Tested: 30/11/2015

PARAMETER	UOM	LOR	DUPGS181115 SOIL - 18/11/2015 SE146247.003	T_5_ESMW05_0.1 SOIL - 17/11/2015 SE146247.007	T_2_ESSB02_0.1 SOIL - 17/11/2015 SE146247.008	T_ESMW07_0.5 SOIL - 16/11/2015 SE146247.010	T_ESMW08_0.1 SOIL - 16/11/2015 SE146247.012
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_ESMW09_0.5 SOIL - 16/11/2015 SE146247.014	T_ESMW10_0.5 SOIL - 18/11/2015 SE146247.016	T_ESSB06_0.1 SOIL - 16/11/2015 SE146247.018	T_ESSB09_0.1 SOIL - 18/11/2015 SE146247.020	T_ESSB09_1 SOIL - 18/11/2015 SE146247.021
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_ESSB10_0.1 SOIL - 19/11/2015 SE146247.022	T_SB07_0.5 SOIL - 18/11/2015 SE146247.024	T_2_SG01 SOIL - 17/11/2015 SE146247.027	T_2_SG02 SOIL - 17/11/2015 SE146247.028	T_2_SG03 SOIL - 17/11/2015 SE146247.029
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_2_SG04 SOIL - 17/11/2015 SE146247.030	T_2_SG05 SOIL - 19/11/2015 SE146247.031	T_SG01 SOIL - 18/11/2015 SE146247.032	T_SG02 SOIL - 18/11/2015 SE146247.033	T_SG03 SOIL - 18/11/2015 SE146247.034
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_SG04 SOIL - 18/11/2015 SE146247.035	T_SG05 SOIL - 18/11/2015 SE146247.036	T_SG06 SOIL - 18/11/2015 SE146247.037	T_SG07 SOIL - 18/11/2015 SE146247.038	T_SG08 SOIL - 19/11/2015 SE146247.039
Asbestos Detected	No unit	-	No	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01	<0.01

PARAMETER	UOM	LOR	T_SG09 SOIL - 19/11/2015 SE146247.040	T_SG10 SOIL - 19/11/2015 SE146247.041	T_ESSB08_0.1 SOIL - 18/11/2015 SE146247.049
Asbestos Detected	No unit	-	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01

VOCs in Water [AN433/AN434] Tested: 25/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044	Trip Blank WATER - 16/11/2015 SE146247.047	Trip Spike WATER - 16/11/2015 SE146247.048
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[92%]
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[96%]
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[109%]
m/p-xylene	µg/L	1	<1	<1	<1	<1	[107%]
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	[114%]
Total Xylenes	µg/L	1.5	<1.5	<1.5	<1.5	<1.5	-
Total BTEX	µg/L	3	<3	<3	<3	<3	-
Naphthalene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	-
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	<5	-	-
Chloromethane	µg/L	5	<5	<5	<5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	<0.3	-	-
Bromomethane	µg/L	10	<10	<10	<10	-	-
Chloroethane	µg/L	5	<5	<5	<5	-	-
Trichlorofluoromethane	µg/L	1	<1	<1	<1	-	-
Acetone (2-propanone)	µg/L	10	<10	<10	<10	-	-
Iodomethane	µg/L	5	<5	<5	<5	-	-
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Acrylonitrile	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	4	<4	<4	<4	-	-
Allyl chloride	µg/L	2	<2	<2	<2	-	-
Carbon disulfide	µg/L	2	<2	<2	<2	-	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	<2	-	-
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Vinyl acetate	µg/L	10	<10	<10	<10	-	-
MEK (2-butanone)	µg/L	10	<10	<10	<10	-	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromochloromethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chloroform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromomethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-nitropropane	µg/L	100	<100	<100	<100	-	-
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	<5	-	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-hexanone (MBK)	µg/L	5	<5	<5	<5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Chlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	<1	-	-

VOCs in Water [AN433/AN434] Tested: 25/11/2015 (continued)

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044	Trip Blank WATER - 16/11/2015 SE146247.047	Trip Spike WATER - 16/11/2015 SE146247.048
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Bromobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-propylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	<0.3	-	-
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
n-butylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	<0.5	-	-
Total VOC	µg/L	10	-	-	-	-	-

Volatile Petroleum Hydrocarbons in Water [AN433/AN434/AN410] Tested: 25/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
TRH C6-C9	µg/L	40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
TRH C10-C14	µg/L	50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200
TRH >C10-C16 (F2)	µg/L	60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500
TRH C10-C36	µg/L	450	<450	<450	<450
TRH C10-C40	µg/L	650	<650	<650	<650

Low Level PAH (Poly Aromatic Hydrocarbons) in Water [AN420] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
Naphthalene	µg/L	0.02	<0.02	<0.02	<0.02
2-methylnaphthalene	µg/L	0.01	<0.01	<0.01	<0.01
1-methylnaphthalene	µg/L	0.01	<0.01	<0.01	<0.01
Acenaphthylene	µg/L	0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/L	0.01	<0.01	<0.01	<0.01
Fluorene	µg/L	0.01	<0.01	<0.01	<0.01
Phenanthrene	µg/L	0.01	<0.01	<0.01	**0.08**
Anthracene	µg/L	0.01	<0.01	<0.01	**0.02**
Fluoranthene	µg/L	0.01	<0.01	<0.01	**0.29**
Pyrene	µg/L	0.01	<0.01	<0.01	**0.27**
Benzo(a)anthracene	µg/L	0.01	<0.01	<0.01	**0.05**
Chrysene	µg/L	0.01	<0.01	<0.01	**0.06**
Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02	<0.02	**0.21**
Benzo(a)pyrene	µg/L	0.01	<0.01	<0.01	**0.14**
Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01	<0.01	**0.09**
Dibenzo(a&h)anthracene	µg/L	0.01	<0.01	<0.01	**0.01**
Benzo(ghi)perylene	µg/L	0.01	<0.01	<0.01	**0.08**
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ	0.012	<0.012	<0.012	**0.19**
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	<0.1	<0.1	**1.3**
Total PAH (18)*	µg/L	0.1	<0.1	<0.1	**1.3**

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
Arsenic, As	µg/L	1	1	1	2
Cadmium, Cd	µg/L	0.1	<0.1	<0.1	<0.1
Chromium, Cr	µg/L	1	1	<1	1
Copper, Cu	µg/L	1	3	5	2
Lead, Pb	µg/L	1	1	2	1
Nickel, Ni	µg/L	1	2	3	4
Zinc, Zn	µg/L	5	36	43	170
Selenium, Se	µg/L	1	<1	<1	<1
Boron, B	µg/L	5	35	36	73

Mercury (dissolved) in Water [AN311/AN312] Tested: 30/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
Mercury	mg/L	0.00005	0.00007	<0.00005	0.00007

Trace Metals (Total) in Water by ICPMS [AN022/AN318] Tested: 24/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
Total Arsenic	µg/L	1	2	2	3
Total Cadmium	µg/L	0.1	<0.1	<0.1	<0.1
Total Copper	µg/L	1	4	4	11
Total Chromium	µg/L	1	2	2	4
Total Nickel	µg/L	1	3	3	9
Total Lead	µg/L	1	5	5	9
Total Zinc	µg/L	5	50	54	99
Total Selenium	µg/L	1	2	2	<1
Total Boron	µg/L	5	40	42	98

Mercury (total) in Water [AN311/AN312] Tested: 30/11/2015

PARAMETER	UOM	LOR	DUPGS161115b WATER - 16/11/2015 SE146247.042	T_6_SW01 WATER - 16/11/2015 SE146247.043	T_SW02 WATER - 16/11/2015 SE146247.044
Total Mercury	mg/L	0.00005	0.00017	0.00007	0.00011

METHOD	METHODOLOGY SUMMARY
AN002	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.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	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 analysis by ASS or ICP as per USEPA Method 200.8.
AN141	Determination of Fluoride by ISE: A fluoride ion selective electrode and reference electrode combination, in the presence of a pH/complexation buffer, is used to determine the fluoride concentration on the soil water extract. The electrode millivolt response is measured logarithmically against fluoride concentration. Reference APHA F- C.
AN311/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.
AN312	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
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
AN400	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 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
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 differential polarity of the eluent solvents.
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433/AN434/AN410	VOCs and C6-C9/C6-C10 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
		IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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STATEMENT OF QA/QC PERFORMANCE

SE146247 R0

CLIENT DETAILS

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Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	50

LABORATORY DETAILS

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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE146247 R0**
Date Received	20 Nov 2015
Date Reported	03 Dec 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Low Level PAH (Poly Aromatic Hydrocarbons) in Water	3 items
	TRH (Total Recoverable Hydrocarbons) in Water	3 items
	VOCs in Water	5 items
	Volatile Petroleum Hydrocarbons in Water	3 items
Matrix Spike	Total Recoverable Metals in Soil by ICPOES	1 item

SAMPLE SUMMARY

Sample counts by matrix	2 Sediment, 43 Soil,	Type of documentation received	COC
Date documentation received	20/11/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	1.1°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

HOLDING TIME SUMMARY

SE146247 R0

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.

Fibre Identification in soil

Method: ME-(AU)-[ENV]AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS181115	SE146247.003	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090770	16 Nov 2015	20 Nov 2015	15 Nov 2016	30 Nov 2015	15 Nov 2016	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090770	16 Nov 2015	20 Nov 2015	15 Nov 2016	30 Nov 2015	15 Nov 2016	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090770	16 Nov 2015	20 Nov 2015	15 Nov 2016	30 Nov 2015	15 Nov 2016	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090770	16 Nov 2015	20 Nov 2015	15 Nov 2016	30 Nov 2015	15 Nov 2016	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090770	19 Nov 2015	20 Nov 2015	18 Nov 2016	30 Nov 2015	18 Nov 2016	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_2_SG01	SE146247.027	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_2_SG02	SE146247.028	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_2_SG03	SE146247.029	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_2_SG04	SE146247.030	LB090770	17 Nov 2015	20 Nov 2015	16 Nov 2016	30 Nov 2015	16 Nov 2016	01 Dec 2015
T_2_SG05	SE146247.031	LB090770	19 Nov 2015	20 Nov 2015	18 Nov 2016	30 Nov 2015	18 Nov 2016	01 Dec 2015
T_SG01	SE146247.032	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG02	SE146247.033	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG03	SE146247.034	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG04	SE146247.035	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG05	SE146247.036	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG06	SE146247.037	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG07	SE146247.038	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015
T_SG08	SE146247.039	LB090770	19 Nov 2015	20 Nov 2015	18 Nov 2016	30 Nov 2015	18 Nov 2016	01 Dec 2015
T_SG09	SE146247.040	LB090770	19 Nov 2015	20 Nov 2015	18 Nov 2016	30 Nov 2015	18 Nov 2016	01 Dec 2015
T_SG10	SE146247.041	LB090770	19 Nov 2015	20 Nov 2015	18 Nov 2016	30 Nov 2015	18 Nov 2016	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090770	18 Nov 2015	20 Nov 2015	17 Nov 2016	30 Nov 2015	17 Nov 2016	01 Dec 2015

Fluoride in Soil (Water Soluble 1:5 Extraction) by ISE

Method: ME-(AU)-[ENV]AN141

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS181115	SE146247.003	LB090799	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090799	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090799	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090799	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESMW09_2	SE146247.015	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090799	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB06_1	SE146247.019	LB090799	16 Nov 2015	20 Nov 2015	14 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090799	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090799	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090799	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB10_1	SE146247.023	LB090799	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090799	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090800	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_SG01	SE146247.027	LB090800	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_SG02	SE146247.028	LB090800	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_SG03	SE146247.029	LB090800	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_SG04	SE146247.030	LB090800	17 Nov 2015	20 Nov 2015	15 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_2_SG05	SE146247.031	LB090800	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG01	SE146247.032	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG02	SE146247.033	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG03	SE146247.034	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG04	SE146247.035	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG05	SE146247.036	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG06	SE146247.037	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG07	SE146247.038	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015

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.

Fluoride in Soil (Water Soluble 1:5 Extraction) by ISE (continued)

Method: ME-(AU)-[ENV]AN141

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_SG08	SE146247.039	LB090800	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG09	SE146247.040	LB090800	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_SG10	SE146247.041	LB090800	19 Nov 2015	20 Nov 2015	17 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015
T_ESSB08_1	SE146247.050	LB090800	18 Nov 2015	20 Nov 2015	16 Dec 2015	01 Dec 2015	29 Dec 2015	01 Dec 2015

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015
T_6_SW01	SE146247.043	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015
T_SW02	SE146247.044	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090693	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_6_SW01	SE146247.043	LB090693	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_SW02	SE146247.044	LB090693	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015

Mercury (total) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090695	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	01 Dec 2015
T_6_SW01	SE146247.043	LB090695	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	01 Dec 2015
T_SW02	SE146247.044	LB090695	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	01 Dec 2015

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_6_SD01	SE146247.002	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
DUPJO181115	SE146247.004	LB090681	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	30 Nov 2015
T_5_ESMW05_0.1	SE146247.007	LB090681	17 Nov 2015	20 Nov 2015	15 Dec 2015	30 Nov 2015	15 Dec 2015	30 Nov 2015
T_2_ESSB02_0.1	SE146247.008	LB090681	17 Nov 2015	20 Nov 2015	15 Dec 2015	30 Nov 2015	15 Dec 2015	30 Nov 2015
T_2_ESSB02_2	SE146247.009	LB090681	17 Nov 2015	20 Nov 2015	15 Dec 2015	30 Nov 2015	15 Dec 2015	30 Nov 2015
T_ESMW07_0.5	SE146247.010	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW07_2	SE146247.011	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW08_0.1	SE146247.012	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW08_1	SE146247.013	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW09_0.5	SE146247.014	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW09_2	SE146247.015	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESMW10_0.5	SE146247.016	LB090681	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	30 Nov 2015
T_ESMW10_1	SE146247.017	LB090681	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	30 Nov 2015
T_ESSB06_0.1	SE146247.018	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESSB06_1	SE146247.019	LB090681	16 Nov 2015	20 Nov 2015	14 Dec 2015	30 Nov 2015	14 Dec 2015	30 Nov 2015
T_ESSB09_0.1	SE146247.020	LB090681	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	30 Nov 2015
T_ESSB09_1	SE146247.021	LB090681	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	30 Nov 2015
T_ESSB10_0.1	SE146247.022	LB090681	19 Nov 2015	20 Nov 2015	17 Dec 2015	30 Nov 2015	17 Dec 2015	30 Nov 2015
T_ESSB10_1	SE146247.023	LB090682	19 Nov 2015	20 Nov 2015	17 Dec 2015	30 Nov 2015	17 Dec 2015	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090682	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	01 Dec 2015
T_SB07_0.5	SE146247.025	LB090682	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090682	17 Nov 2015	20 Nov 2015	15 Dec 2015	30 Nov 2015	15 Dec 2015	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090682	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	01 Dec 2015
T_ESSB08_1	SE146247.050	LB090682	18 Nov 2015	20 Nov 2015	16 Dec 2015	30 Nov 2015	16 Dec 2015	01 Dec 2015

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_6_SD01	SE146247.002	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
DUPGS181115	SE146247.003	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
DUPJO181115	SE146247.004	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_5_ESMW05_0.1	SE146247.007	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_ESSB02_0.1	SE146247.008	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_ESSB02_2	SE146247.009	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW07_0.5	SE146247.010	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015

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.

Moisture Content (continued) — Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_ESMW07_2	SE146247.011	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW08_0.1	SE146247.012	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW08_1	SE146247.013	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW09_0.5	SE146247.014	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW09_2	SE146247.015	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW10_0.5	SE146247.016	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESMW10_1	SE146247.017	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB06_0.1	SE146247.018	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB06_1	SE146247.019	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB09_0.1	SE146247.020	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB09_1	SE146247.021	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB10_0.1	SE146247.022	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB10_1	SE146247.023	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SB07_0.5	SE146247.024	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SB07_0.5	SE146247.025	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_5_ESMW05_2	SE146247.026	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_SG01	SE146247.027	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_SG02	SE146247.028	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_SG03	SE146247.029	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_SG04	SE146247.030	LB090297	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_2_SG05	SE146247.031	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG01	SE146247.032	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG02	SE146247.033	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG03	SE146247.034	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG04	SE146247.035	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG05	SE146247.036	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG06	SE146247.037	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG07	SE146247.038	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG08	SE146247.039	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG09	SE146247.040	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_SG10	SE146247.041	LB090297	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
Trip Blank	SE146247.045	LB090433	16 Nov 2015	20 Nov 2015	30 Nov 2015	25 Nov 2015	30 Nov 2015	30 Nov 2015
Trip Blank	SE146247.047	LB090297	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB08_0.1	SE146247.049	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015
T_ESSB08_1	SE146247.050	LB090297	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	29 Nov 2015	25 Nov 2015

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_6_SD01	SE146247.002	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
DUPJO181115	SE146247.004	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW07_2	SE146247.011	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW08_1	SE146247.013	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW09_2	SE146247.015	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW10_1	SE146247.017	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB06_1	SE146247.019	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB09_1	SE146247.021	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB10_1	SE146247.023	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_SB07_0.5	SE146247.024	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_SB07_0.5	SE146247.025	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015

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.

OC Pesticides in Soil (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05_2	SE146247.026	LB090351	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB08_1	SE146247.050	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015

OP Pesticides in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_6_SD01	SE146247.002	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
DUPJO181115	SE146247.004	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_5_ESMW05_0.1	SE146247.007	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_2_ESSB02_2	SE146247.009	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW07_2	SE146247.011	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW08_0.1	SE146247.012	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW08_1	SE146247.013	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW09_0.5	SE146247.014	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW09_2	SE146247.015	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW10_0.5	SE146247.016	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW10_1	SE146247.017	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB06_0.1	SE146247.018	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB06_1	SE146247.019	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB09_0.1	SE146247.020	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB09_1	SE146247.021	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB10_0.1	SE146247.022	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB10_1	SE146247.023	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_SB07_0.5	SE146247.024	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_SB07_0.5	SE146247.025	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_5_ESMW05_2	SE146247.026	LB090351	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB08_1	SE146247.050	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_6_SD01	SE146247.002	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
DUPJO181115	SE146247.004	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_5_ESMW05_0.1	SE146247.007	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_2_ESSB02_0.1	SE146247.008	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_2_ESSB02_2	SE146247.009	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW07_0.5	SE146247.010	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW07_2	SE146247.011	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW08_0.1	SE146247.012	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW08_1	SE146247.013	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW09_0.5	SE146247.014	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW09_2	SE146247.015	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW10_0.5	SE146247.016	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESMW10_1	SE146247.017	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB06_0.1	SE146247.018	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB06_1	SE146247.019	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB09_0.1	SE146247.020	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB09_1	SE146247.021	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB10_0.1	SE146247.022	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB10_1	SE146247.023	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_SB07_0.5	SE146247.024	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_SB07_0.5	SE146247.025	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_5_ESMW05_2	SE146247.026	LB090351	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB08_0.1	SE146247.049	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015
T_ESSB08_1	SE146247.050	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	30 Nov 2015

HOLDING TIME SUMMARY

SE146247 R0

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.

PCBs in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_6_SD01	SE146247.002	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
DUPJO181115	SE146247.004	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW07_2	SE146247.011	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW08_1	SE146247.013	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW09_2	SE146247.015	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESMW10_1	SE146247.017	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB06_1	SE146247.019	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB09_1	SE146247.021	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB10_1	SE146247.023	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_SB07_0.5	SE146247.024	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_SB07_0.5	SE146247.025	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090351	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015
T_ESSB08_1	SE146247.050	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	02 Dec 2015

Total Recoverable Metals in Soil by ICPOES

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_6_SD01	SE146247.002	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
DUPGS181115	SE146247.003	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
DUPJO181115	SE146247.004	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090589	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090589	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	01 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090589	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW07_2	SE146247.011	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW08_1	SE146247.013	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW09_2	SE146247.015	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_ESMW10_1	SE146247.017	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESSB06_1	SE146247.019	LB090589	16 Nov 2015	20 Nov 2015	14 May 2016	27 Nov 2015	14 May 2016	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090589	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090590	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	01 Dec 2015
T_ESSB10_1	SE146247.023	LB090590	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_SB07_0.5	SE146247.025	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090590	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	01 Dec 2015
T_2_SG01	SE146247.027	LB090590	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	27 Nov 2015
T_2_SG02	SE146247.028	LB090590	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	27 Nov 2015
T_2_SG03	SE146247.029	LB090590	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	27 Nov 2015
T_2_SG04	SE146247.030	LB090590	17 Nov 2015	20 Nov 2015	15 May 2016	27 Nov 2015	15 May 2016	27 Nov 2015
T_2_SG05	SE146247.031	LB090590	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	27 Nov 2015
T_SG01	SE146247.032	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG02	SE146247.033	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG03	SE146247.034	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015

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.

Total Recoverable Metals in Soil by ICPOES (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_SG04	SE146247.035	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG05	SE146247.036	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG06	SE146247.037	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG07	SE146247.038	LB090590	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	27 Nov 2015
T_SG08	SE146247.039	LB090590	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	27 Nov 2015
T_SG09	SE146247.040	LB090590	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	27 Nov 2015
T_SG10	SE146247.041	LB090593	19 Nov 2015	20 Nov 2015	17 May 2016	27 Nov 2015	17 May 2016	30 Nov 2015
T_ESSB08_0.1	SE146247.049	LB090593	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	30 Nov 2015
T_ESSB08_1	SE146247.050	LB090593	18 Nov 2015	20 Nov 2015	16 May 2016	27 Nov 2015	16 May 2016	30 Nov 2015

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090286	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015
T_6_SW01	SE146247.043	LB090286	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015
T_SW02	SE146247.044	LB090286	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015

Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090287	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015
T_6_SW01	SE146247.043	LB090287	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015
T_SW02	SE146247.044	LB090287	16 Nov 2015	20 Nov 2015	14 May 2016	24 Nov 2015	14 May 2016	25 Nov 2015

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_6_SD01	SE146247.002	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
DUPJO181115	SE146247.004	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090349	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_2	SE146247.011	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_1	SE146247.013	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_2	SE146247.015	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_1	SE146247.017	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_1	SE146247.019	LB090349	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090349	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_1	SE146247.023	LB090349	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.025	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090351	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_1	SE146247.050	LB090351	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015
T_6_SW01	SE146247.043	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015
T_SW02	SE146247.044	LB090292	16 Nov 2015	20 Nov 2015	23 Nov 2015	24 Nov 2015†	03 Jan 2016	01 Dec 2015

VOC's in Soil

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_6_SD01	SE146247.002	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
DUPJO181115	SE146247.004	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015

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)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_2_ESSB02_0.1	SE146247.008	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_2	SE146247.011	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_1	SE146247.013	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_2	SE146247.015	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_1	SE146247.017	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_1	SE146247.019	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090289	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_1	SE146247.023	LB090289	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.025	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090355	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
Trip Blank	SE146247.045	LB090412	16 Nov 2015	20 Nov 2015	30 Nov 2015	25 Nov 2015	04 Jan 2016	30 Nov 2015
Trip Spike	SE146247.046	LB090412	16 Nov 2015	20 Nov 2015	30 Nov 2015	25 Nov 2015	04 Jan 2016	30 Nov 2015
Trip Blank	SE146247.047	LB090355	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
Trip Spike	SE146247.048	LB090355	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_1	SE146247.050	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
T_6_SW01	SE146247.043	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
T_SW02	SE146247.044	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
Trip Blank	SE146247.045	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	01 Dec 2015
Trip Spike	SE146247.046	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	01 Dec 2015
Trip Blank	SE146247.047	LB090459	16 Nov 2015	20 Nov 2015	23 Nov 2015	26 Nov 2015†	05 Jan 2016	01 Dec 2015
Trip Spike	SE146247.048	LB090459	16 Nov 2015	20 Nov 2015	23 Nov 2015	26 Nov 2015†	05 Jan 2016	01 Dec 2015

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115	SE146247.001	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_6_SD01	SE146247.002	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
DUPJO181115	SE146247.004	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_0.1	SE146247.007	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_0.1	SE146247.008	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_2_ESSB02_2	SE146247.009	LB090289	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_0.5	SE146247.010	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW07_2	SE146247.011	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_0.1	SE146247.012	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW08_1	SE146247.013	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_0.5	SE146247.014	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW09_2	SE146247.015	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_0.5	SE146247.016	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESMW10_1	SE146247.017	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_0.1	SE146247.018	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB06_1	SE146247.019	LB090289	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_0.1	SE146247.020	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB09_1	SE146247.021	LB090289	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_0.1	SE146247.022	LB090289	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB10_1	SE146247.023	LB090289	19 Nov 2015	20 Nov 2015	03 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.024	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_SB07_0.5	SE146247.025	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_5_ESMW05_2	SE146247.026	LB090355	17 Nov 2015	20 Nov 2015	01 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015

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.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
Trip Blank	SE146247.045	LB090412	16 Nov 2015	20 Nov 2015	30 Nov 2015	25 Nov 2015	04 Jan 2016	01 Dec 2015
Trip Spike	SE146247.046	LB090412	16 Nov 2015	20 Nov 2015	30 Nov 2015	25 Nov 2015	04 Jan 2016	01 Dec 2015
Trip Blank	SE146247.047	LB090355	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
Trip Spike	SE146247.048	LB090355	16 Nov 2015	20 Nov 2015	30 Nov 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_0.1	SE146247.049	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015
T_ESSB08_1	SE146247.050	LB090355	18 Nov 2015	20 Nov 2015	02 Dec 2015	24 Nov 2015	03 Jan 2016	01 Dec 2015

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
DUPGS161115b	SE146247.042	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
T_6_SW01	SE146247.043	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
T_SW02	SE146247.044	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	26 Nov 2015
Trip Blank	SE146247.045	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	01 Dec 2015
Trip Spike	SE146247.046	LB090363	16 Nov 2015	20 Nov 2015	23 Nov 2015	25 Nov 2015†	04 Jan 2016	01 Dec 2015
Trip Blank	SE146247.047	LB090459	16 Nov 2015	20 Nov 2015	23 Nov 2015	26 Nov 2015†	05 Jan 2016	01 Dec 2015
Trip Spike	SE146247.048	LB090459	16 Nov 2015	20 Nov 2015	23 Nov 2015	26 Nov 2015†	05 Jan 2016	01 Dec 2015

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	NA
	T_6_SW01	SE146247.043	%	40 - 130%	NA
	T_SW02	SE146247.044	%	40 - 130%	NA
d14-p-terphenyl (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	44
	T_6_SW01	SE146247.043	%	40 - 130%	42
	T_SW02	SE146247.044	%	40 - 130%	47
d5-nitrobenzene (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	NA
	T_6_SW01	SE146247.043	%	40 - 130%	NA
	T_SW02	SE146247.044	%	40 - 130%	NA

OC Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	DUPJO181115	SE146247.004	%	60 - 130%	76
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	105
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	73
	T_ESMW07_2	SE146247.011	%	60 - 130%	76
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	74
	T_ESMW08_1	SE146247.013	%	60 - 130%	73
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	71
	T_ESMW09_2	SE146247.015	%	60 - 130%	74
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	71
	T_ESMW10_1	SE146247.017	%	60 - 130%	76
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	76
	T_ESSB06_1	SE146247.019	%	60 - 130%	76
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	79
	T_ESSB09_1	SE146247.021	%	60 - 130%	75
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	78
	T_ESSB10_1	SE146247.023	%	60 - 130%	73
	T_SB07_0.5	SE146247.024	%	60 - 130%	110
	T_SB07_0.5	SE146247.025	%	60 - 130%	86
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	80
	T_ESSB08_1	SE146247.050	%	60 - 130%	84

OP Pesticides in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	DUPJO181115	SE146247.004	%	60 - 130%	76
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	78
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	72
	T_ESMW07_2	SE146247.011	%	60 - 130%	70
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	74
	T_ESMW08_1	SE146247.013	%	60 - 130%	76
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	72
	T_ESMW09_2	SE146247.015	%	60 - 130%	72
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	70
	T_ESMW10_1	SE146247.017	%	60 - 130%	76
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	74
	T_ESSB06_1	SE146247.019	%	60 - 130%	74
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	76
	T_ESSB09_1	SE146247.021	%	60 - 130%	74
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	70
	T_ESSB10_1	SE146247.023	%	60 - 130%	76
	T_SB07_0.5	SE146247.024	%	60 - 130%	70
	T_SB07_0.5	SE146247.025	%	60 - 130%	70
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	74
	T_ESSB08_1	SE146247.050	%	60 - 130%	78
d14-p-terphenyl (Surrogate)	DUPJO181115	SE146247.004	%	60 - 130%	82
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	108
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	86
	T_ESMW07_2	SE146247.011	%	60 - 130%	86
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	92
	T_ESMW08_1	SE146247.013	%	60 - 130%	86
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	88

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Soil (continued) — Method: ME-(AU)-[ENV]AN400/AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	T_ESMW09_2	SE146247.015	%	60 - 130%	98
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	86
	T_ESMW10_1	SE146247.017	%	60 - 130%	90
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	88
	T_ESSB06_1	SE146247.019	%	60 - 130%	72
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	82
	T_ESSB09_1	SE146247.021	%	60 - 130%	78
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	78
	T_ESSB10_1	SE146247.023	%	60 - 130%	84
	T_SB07_0.5	SE146247.024	%	60 - 130%	106
	T_SB07_0.5	SE146247.025	%	60 - 130%	90
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	84
	T_ESSB08_1	SE146247.050	%	60 - 130%	98

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	DUPGS161115	SE146247.001	%	70 - 130%	76
	T_6_SD01	SE146247.002	%	70 - 130%	74
	DUPJO181115	SE146247.004	%	70 - 130%	76
	T_5_ESMW05_0.1	SE146247.007	%	70 - 130%	74
	T_2_ESSB02_0.1	SE146247.008	%	70 - 130%	78
	T_2_ESSB02_2	SE146247.009	%	70 - 130%	70
	T_ESMW07_0.5	SE146247.010	%	70 - 130%	72
	T_ESMW07_2	SE146247.011	%	70 - 130%	70
	T_ESMW08_0.1	SE146247.012	%	70 - 130%	74
	T_ESMW08_1	SE146247.013	%	70 - 130%	76
	T_ESMW09_0.5	SE146247.014	%	70 - 130%	72
	T_ESMW09_2	SE146247.015	%	70 - 130%	72
	T_ESMW10_0.5	SE146247.016	%	70 - 130%	70
	T_ESMW10_1	SE146247.017	%	70 - 130%	76
	T_ESSB06_0.1	SE146247.018	%	70 - 130%	74
	T_ESSB06_1	SE146247.019	%	70 - 130%	74
	T_ESSB09_0.1	SE146247.020	%	70 - 130%	76
	T_ESSB09_1	SE146247.021	%	70 - 130%	74
	T_ESSB10_0.1	SE146247.022	%	70 - 130%	70
	T_ESSB10_1	SE146247.023	%	70 - 130%	76
	T_SB07_0.5	SE146247.024	%	70 - 130%	70
	T_SB07_0.5	SE146247.025	%	70 - 130%	70
	T_5_ESMW05_2	SE146247.026	%	70 - 130%	72
	T_ESSB08_0.1	SE146247.049	%	70 - 130%	74
	T_ESSB08_1	SE146247.050	%	70 - 130%	78
d14-p-terphenyl (Surrogate)	DUPGS161115	SE146247.001	%	70 - 130%	76
	T_6_SD01	SE146247.002	%	70 - 130%	72
	DUPJO181115	SE146247.004	%	70 - 130%	82
	T_5_ESMW05_0.1	SE146247.007	%	70 - 130%	72
	T_2_ESSB02_0.1	SE146247.008	%	70 - 130%	108
	T_2_ESSB02_2	SE146247.009	%	70 - 130%	88
	T_ESMW07_0.5	SE146247.010	%	70 - 130%	86
	T_ESMW07_2	SE146247.011	%	70 - 130%	86
	T_ESMW08_0.1	SE146247.012	%	70 - 130%	92
	T_ESMW08_1	SE146247.013	%	70 - 130%	86
	T_ESMW09_0.5	SE146247.014	%	70 - 130%	88
	T_ESMW09_2	SE146247.015	%	70 - 130%	98
	T_ESMW10_0.5	SE146247.016	%	70 - 130%	86
	T_ESMW10_1	SE146247.017	%	70 - 130%	90
	T_ESSB06_0.1	SE146247.018	%	70 - 130%	88
	T_ESSB06_1	SE146247.019	%	70 - 130%	72
	T_ESSB09_0.1	SE146247.020	%	70 - 130%	82
	T_ESSB09_1	SE146247.021	%	70 - 130%	78
	T_ESSB10_0.1	SE146247.022	%	70 - 130%	78
	T_ESSB10_1	SE146247.023	%	70 - 130%	84

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d14-p-terphenyl (Surrogate)	T_SB07_0.5	SE146247.024	%	70 - 130%	106
	T_SB07_0.5	SE146247.025	%	70 - 130%	90
	T_5_ESMW05_2	SE146247.026	%	70 - 130%	90
	T_ESSB08_0.1	SE146247.049	%	70 - 130%	84
	T_ESSB08_1	SE146247.050	%	70 - 130%	98
d5-nitrobenzene (Surrogate)	DUPGS161115	SE146247.001	%	70 - 130%	72
	T_6_SD01	SE146247.002	%	70 - 130%	72
	DUPJO181115	SE146247.004	%	70 - 130%	82
	T_5_ESMW05_0.1	SE146247.007	%	70 - 130%	78
	T_2_ESSB02_0.1	SE146247.008	%	70 - 130%	104
	T_2_ESSB02_2	SE146247.009	%	70 - 130%	94
	T_ESMW07_0.5	SE146247.010	%	70 - 130%	86
	T_ESMW07_2	SE146247.011	%	70 - 130%	88
	T_ESMW08_0.1	SE146247.012	%	70 - 130%	90
	T_ESMW08_1	SE146247.013	%	70 - 130%	82
	T_ESMW09_0.5	SE146247.014	%	70 - 130%	82
	T_ESMW09_2	SE146247.015	%	70 - 130%	82
	T_ESMW10_0.5	SE146247.016	%	70 - 130%	78
	T_ESMW10_1	SE146247.017	%	70 - 130%	74
	T_ESSB06_0.1	SE146247.018	%	70 - 130%	76
	T_ESSB06_1	SE146247.019	%	70 - 130%	72
	T_ESSB09_0.1	SE146247.020	%	70 - 130%	72
	T_ESSB09_1	SE146247.021	%	70 - 130%	72
	T_ESSB10_0.1	SE146247.022	%	70 - 130%	72
	T_ESSB10_1	SE146247.023	%	70 - 130%	74
	T_SB07_0.5	SE146247.024	%	70 - 130%	86
	T_SB07_0.5	SE146247.025	%	70 - 130%	88
	T_5_ESMW05_2	SE146247.026	%	70 - 130%	80
	T_ESSB08_0.1	SE146247.049	%	70 - 130%	80
	T_ESSB08_1	SE146247.050	%	70 - 130%	88

PCBs in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	117
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	105
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	71
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	77

VOC's in Soil

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	89
	T_6_SD01	SE146247.002	%	60 - 130%	78
	DUPJO181115	SE146247.004	%	60 - 130%	74
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	113
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	99
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	87
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	93
	T_ESMW07_2	SE146247.011	%	60 - 130%	92
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	100
	T_ESMW08_1	SE146247.013	%	60 - 130%	89
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	107
	T_ESMW09_2	SE146247.015	%	60 - 130%	92
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	98
	T_ESMW10_1	SE146247.017	%	60 - 130%	96
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	94
	T_ESSB06_1	SE146247.019	%	60 - 130%	93
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	101
	T_ESSB09_1	SE146247.021	%	60 - 130%	92
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	100
	T_ESSB10_1	SE146247.023	%	60 - 130%	95
	T_SB07_0.5	SE146247.024	%	60 - 130%	93
	T_SB07_0.5	SE146247.025	%	60 - 130%	112

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_5_ESMW05_2	SE146247.026	%	60 - 130%	89
	Trip Blank	SE146247.045	%	60 - 130%	97
	Trip Spike	SE146247.046	%	60 - 130%	100
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	103
	T_ESSB08_1	SE146247.050	%	60 - 130%	94
d4-1,2-dichloroethane (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	95
	T_6_SD01	SE146247.002	%	60 - 130%	79
	DUPJO181115	SE146247.004	%	60 - 130%	81
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	113
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	103
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	109
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	101
	T_ESMW07_2	SE146247.011	%	60 - 130%	101
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	112
	T_ESMW08_1	SE146247.013	%	60 - 130%	114
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	108
	T_ESMW09_2	SE146247.015	%	60 - 130%	98
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	102
	T_ESMW10_1	SE146247.017	%	60 - 130%	100
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	97
	T_ESSB06_1	SE146247.019	%	60 - 130%	97
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	85
	T_ESSB09_1	SE146247.021	%	60 - 130%	102
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	96
	T_ESSB10_1	SE146247.023	%	60 - 130%	98
	T_SB07_0.5	SE146247.024	%	60 - 130%	100
	T_SB07_0.5	SE146247.025	%	60 - 130%	103
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	108
	Trip Blank	SE146247.045	%	60 - 130%	118
	Trip Spike	SE146247.046	%	60 - 130%	112
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	100
	T_ESSB08_1	SE146247.050	%	60 - 130%	98
d8-toluene (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	73
	T_6_SD01	SE146247.002	%	60 - 130%	88
	DUPJO181115	SE146247.004	%	60 - 130%	74
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	94
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	89
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	98
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	79
	T_ESMW07_2	SE146247.011	%	60 - 130%	82
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	91
	T_ESMW08_1	SE146247.013	%	60 - 130%	101
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	89
	T_ESMW09_2	SE146247.015	%	60 - 130%	76
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	84
	T_ESMW10_1	SE146247.017	%	60 - 130%	79
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	75
	T_ESSB06_1	SE146247.019	%	60 - 130%	89
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	78
	T_ESSB09_1	SE146247.021	%	60 - 130%	86
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	83
	T_ESSB10_1	SE146247.023	%	60 - 130%	84
	T_SB07_0.5	SE146247.024	%	60 - 130%	75
	T_SB07_0.5	SE146247.025	%	60 - 130%	89
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	91
	Trip Blank	SE146247.045	%	60 - 130%	78
	Trip Spike	SE146247.046	%	60 - 130%	76
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	79
	T_ESSB08_1	SE146247.050	%	60 - 130%	75
Dibromofluoromethane (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	87
	T_6_SD01	SE146247.002	%	60 - 130%	73

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Dibromofluoromethane (Surrogate)	DUPJO181115	SE146247.004	%	60 - 130%	81
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	103
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	105
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	105
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	90
	T_ESMW07_2	SE146247.011	%	60 - 130%	95
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	103
	T_ESMW08_1	SE146247.013	%	60 - 130%	108
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	100
	T_ESMW09_2	SE146247.015	%	60 - 130%	89
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	94
	T_ESMW10_1	SE146247.017	%	60 - 130%	90
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	86
	T_ESSB06_1	SE146247.019	%	60 - 130%	99
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	87
	T_ESSB09_1	SE146247.021	%	60 - 130%	100
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	91
	T_ESSB10_1	SE146247.023	%	60 - 130%	95
	T_SB07_0.5	SE146247.024	%	60 - 130%	92
	T_SB07_0.5	SE146247.025	%	60 - 130%	98
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	102
	Trip Blank	SE146247.045	%	60 - 130%	115
	Trip Spike	SE146247.046	%	60 - 130%	108
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	92
	T_ESSB08_1	SE146247.050	%	60 - 130%	92

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	121
	T_6_SW01	SE146247.043	%	40 - 130%	116
	T_SW02	SE146247.044	%	40 - 130%	107
	Trip Blank	SE146247.047	%	40 - 130%	115
	Trip Spike	SE146247.048	%	40 - 130%	110
d4-1,2-dichloroethane (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	112
	T_6_SW01	SE146247.043	%	40 - 130%	113
	T_SW02	SE146247.044	%	40 - 130%	126
	Trip Blank	SE146247.047	%	40 - 130%	125
	Trip Spike	SE146247.048	%	40 - 130%	123
d8-toluene (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	99
	T_6_SW01	SE146247.043	%	40 - 130%	100
	T_SW02	SE146247.044	%	40 - 130%	84
	Trip Blank	SE146247.047	%	40 - 130%	86
	Trip Spike	SE146247.048	%	40 - 130%	86
Dibromofluoromethane (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	115
	T_6_SW01	SE146247.043	%	40 - 130%	120
	T_SW02	SE146247.044	%	40 - 130%	123
	Trip Blank	SE146247.047	%	40 - 130%	128
	Trip Spike	SE146247.048	%	40 - 130%	116

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	92
	T_6_SD01	SE146247.002	%	60 - 130%	93
	DUPJO181115	SE146247.004	%	60 - 130%	102
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	88
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	83
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	87
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	90
	T_ESMW07_2	SE146247.011	%	60 - 130%	92
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	92
	T_ESMW08_1	SE146247.013	%	60 - 130%	89
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	94

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_ESMW09_2	SE146247.015	%	60 - 130%	92
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	95
	T_ESMW10_1	SE146247.017	%	60 - 130%	96
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	92
	T_ESSB06_1	SE146247.019	%	60 - 130%	93
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	89
	T_ESSB09_1	SE146247.021	%	60 - 130%	92
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	92
	T_ESSB10_1	SE146247.023	%	60 - 130%	95
	T_SB07_0.5	SE146247.024	%	60 - 130%	93
	T_SB07_0.5	SE146247.025	%	60 - 130%	91
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	89
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	91
	T_ESSB08_1	SE146247.050	%	60 - 130%	94
d4-1,2-dichloroethane (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	99
	T_6_SD01	SE146247.002	%	60 - 130%	82
	DUPJO181115	SE146247.004	%	60 - 130%	85
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	119
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	107
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	109
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	105
	T_ESMW07_2	SE146247.011	%	60 - 130%	101
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	117
	T_ESMW08_1	SE146247.013	%	60 - 130%	114
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	113
	T_ESMW09_2	SE146247.015	%	60 - 130%	98
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	107
	T_ESMW10_1	SE146247.017	%	60 - 130%	100
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	102
	T_ESSB06_1	SE146247.019	%	60 - 130%	97
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	88
	T_ESSB09_1	SE146247.021	%	60 - 130%	102
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	101
	T_ESSB10_1	SE146247.023	%	60 - 130%	98
	T_SB07_0.5	SE146247.024	%	60 - 130%	100
	T_SB07_0.5	SE146247.025	%	60 - 130%	108
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	108
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	104
	T_ESSB08_1	SE146247.050	%	60 - 130%	98
d8-toluene (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	78
	T_6_SD01	SE146247.002	%	60 - 130%	91
	DUPJO181115	SE146247.004	%	60 - 130%	79
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	101
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	104
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	98
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	83
	T_ESMW07_2	SE146247.011	%	60 - 130%	82
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	98
	T_ESMW08_1	SE146247.013	%	60 - 130%	101
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	92
	T_ESMW09_2	SE146247.015	%	60 - 130%	76
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	86
	T_ESMW10_1	SE146247.017	%	60 - 130%	79
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	77
	T_ESSB06_1	SE146247.019	%	60 - 130%	89
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	71
	T_ESSB09_1	SE146247.021	%	60 - 130%	86
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	87
	T_ESSB10_1	SE146247.023	%	60 - 130%	84
	T_SB07_0.5	SE146247.024	%	60 - 130%	75
	T_SB07_0.5	SE146247.025	%	60 - 130%	93

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued) — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	T_5_ESMW05_2	SE146247.026	%	60 - 130%	91
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	83
	T_ESSB08_1	SE146247.050	%	60 - 130%	75
Dibromofluoromethane (Surrogate)	DUPGS161115	SE146247.001	%	60 - 130%	94
	T_6_SD01	SE146247.002	%	60 - 130%	78
	DUPJO181115	SE146247.004	%	60 - 130%	88
	T_5_ESMW05_0.1	SE146247.007	%	60 - 130%	111
	T_2_ESSB02_0.1	SE146247.008	%	60 - 130%	113
	T_2_ESSB02_2	SE146247.009	%	60 - 130%	105
	T_ESMW07_0.5	SE146247.010	%	60 - 130%	97
	T_ESMW07_2	SE146247.011	%	60 - 130%	95
	T_ESMW08_0.1	SE146247.012	%	60 - 130%	111
	T_ESMW08_1	SE146247.013	%	60 - 130%	108
	T_ESMW09_0.5	SE146247.014	%	60 - 130%	107
	T_ESMW09_2	SE146247.015	%	60 - 130%	89
	T_ESMW10_0.5	SE146247.016	%	60 - 130%	101
	T_ESMW10_1	SE146247.017	%	60 - 130%	90
	T_ESSB06_0.1	SE146247.018	%	60 - 130%	92
	T_ESSB06_1	SE146247.019	%	60 - 130%	99
	T_ESSB09_0.1	SE146247.020	%	60 - 130%	93
	T_ESSB09_1	SE146247.021	%	60 - 130%	100
	T_ESSB10_0.1	SE146247.022	%	60 - 130%	98
	T_ESSB10_1	SE146247.023	%	60 - 130%	95
	T_SB07_0.5	SE146247.024	%	60 - 130%	92
	T_SB07_0.5	SE146247.025	%	60 - 130%	104
	T_5_ESMW05_2	SE146247.026	%	60 - 130%	102
	T_ESSB08_0.1	SE146247.049	%	60 - 130%	98
	T_ESSB08_1	SE146247.050	%	60 - 130%	92

Volatile Petroleum Hydrocarbons in Water — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	113
	T_6_SW01	SE146247.043	%	40 - 130%	115
	T_SW02	SE146247.044	%	40 - 130%	106
d4-1,2-dichloroethane (Surrogate)	DUPGS161115b	SE146247.042	%	60 - 130%	118
	T_6_SW01	SE146247.043	%	60 - 130%	120
	T_SW02	SE146247.044	%	60 - 130%	108
d8-toluene (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	87
	T_6_SW01	SE146247.043	%	40 - 130%	86
	T_SW02	SE146247.044	%	40 - 130%	79
Dibromofluoromethane (Surrogate)	DUPGS161115b	SE146247.042	%	40 - 130%	126
	T_6_SW01	SE146247.043	%	40 - 130%	106
	T_SW02	SE146247.044	%	40 - 130%	109

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Fluoride in Soil (Water Soluble 1:5 Extraction) by ISE

Method: ME-(AU)-[ENV]AN141

Sample Number	Parameter	Units	LOR	Result
LB090799.018	Water Soluble Fluoride*	mg/kg	0.5	<0.5
LB090800.020	Water Soluble Fluoride*	mg/kg	0.5	<0.5

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB090292.001	Naphthalene	µg/L	0.02	<0.02
	2-methylnaphthalene	µg/L	0.01	<0.01
	1-methylnaphthalene	µg/L	0.01	<0.01
	Acenaphthylene	µg/L	0.01	<0.01
	Acenaphthene	µg/L	0.01	<0.01
	Fluorene	µg/L	0.01	<0.01
	Phenanthrene	µg/L	0.01	<0.01
	Anthracene	µg/L	0.01	<0.01
	Fluoranthene	µg/L	0.01	<0.01
	Pyrene	µg/L	0.01	<0.01
	Benzo(a)anthracene	µg/L	0.01	<0.01
	Chrysene	µg/L	0.01	<0.01
	Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02
	Benzo(a)pyrene	µg/L	0.01	<0.01
	Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01
	Dibenzo(a&h)anthracene	µg/L	0.01	<0.01
	Benzo(ghi)perylene	µg/L	0.01	<0.01
Surrogates	d14-p-terphenyl (Surrogate)	%	-	55

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB090693.001	Mercury	mg/L	0.00005	<0.00005

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB090681.001	Mercury	mg/kg	0.01	<0.01
LB090682.001	Mercury	mg/kg	0.01	<0.01

OC Pesticides in Soil

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

Sample Number	Parameter	Units	LOR	Result
LB090349.001	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Alpha BHC	mg/kg	0.1	<0.1
	Lindane	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	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
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.2	<0.2
	Endrin	mg/kg	0.2	<0.2
	Beta Endosulfan	mg/kg	0.2	<0.2
	p,p'-DDD	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	Endrin Aldehyde	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Endrin Ketone	mg/kg	0.1	<0.1
	Isodrin	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

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

Sample Number		Parameter	Units	LOR	Result
LB090351.001		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
		Alpha BHC	mg/kg	0.1	<0.1
		Lindane	mg/kg	0.1	<0.1
		Heptachlor	mg/kg	0.1	<0.1
		Aldrin	mg/kg	0.1	<0.1
		Beta BHC	mg/kg	0.1	<0.1
		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
		p,p'-DDE	mg/kg	0.1	<0.1
		Dieldrin	mg/kg	0.2	<0.2
		Endrin	mg/kg	0.2	<0.2
		Beta Endosulfan	mg/kg	0.2	<0.2
		p,p'-DDD	mg/kg	0.1	<0.1
		p,p'-DDT	mg/kg	0.1	<0.1
		Endosulfan sulphate	mg/kg	0.1	<0.1
		Endrin Aldehyde	mg/kg	0.1	<0.1
		Methoxychlor	mg/kg	0.1	<0.1
		Endrin Ketone	mg/kg	0.1	<0.1
		Isodrin	mg/kg	0.1	<0.1
		Mirex	mg/kg	0.1	<0.1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	75

OP Pesticides in Soil — Method: ME-(AU)-[ENV]AN400/AN420

Sample Number		Parameter	Units	LOR	Result
LB090349.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	84
		d14-p-terphenyl (Surrogate)	%	-	92
LB090351.001		Dichlorvos	mg/kg	0.5	<0.5
		Dimethoate	mg/kg	0.5	<0.5
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5
		Fenitrothion	mg/kg	0.2	<0.2
		Malathion	mg/kg	0.2	<0.2
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2
		Bromophos Ethyl	mg/kg	0.2	<0.2
		Methidathion	mg/kg	0.5	<0.5
		Ethion	mg/kg	0.2	<0.2
		Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2
	Surrogates	2-fluorobiphenyl (Surrogate)	%	-	72
		d14-p-terphenyl (Surrogate)	%	-	102

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

Sample Number	Parameter	Units	LOR	Result
LB090349.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

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

Sample Number		Parameter	Units	LOR	Result
LB090349.001		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	86
		2-fluorobiphenyl (Surrogate)	%	-	84
		d14-p-terphenyl (Surrogate)	%	-	92
LB090351.001		Naphthalene	mg/kg	0.1	<0.1
		2-methylnaphthalene	mg/kg	0.1	<0.1
		1-methylnaphthalene	mg/kg	0.1	<0.1
		Acenaphthylene	mg/kg	0.1	<0.1
		Acenaphthene	mg/kg	0.1	<0.1
		Fluorene	mg/kg	0.1	<0.1
		Phenanthrene	mg/kg	0.1	<0.1
		Anthracene	mg/kg	0.1	<0.1
		Fluoranthene	mg/kg	0.1	<0.1
		Pyrene	mg/kg	0.1	<0.1
		Benzo(a)anthracene	mg/kg	0.1	<0.1
		Chrysene	mg/kg	0.1	<0.1
		Benzo(a)pyrene	mg/kg	0.1	<0.1
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
		Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1
		Benzo(ghi)perylene	mg/kg	0.1	<0.1
		Total PAH (18)	mg/kg	0.8	<0.8
	Surrogates	d5-nitrobenzene (Surrogate)	%	-	92
		2-fluorobiphenyl (Surrogate)	%	-	72
		d14-p-terphenyl (Surrogate)	%	-	102

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

Sample Number		Parameter	Units	LOR	Result
LB090349.001		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
		Arochlor 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
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	87
LB090351.001		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
		Arochlor 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
		Arochlor 1268	mg/kg	0.2	<0.2
		Total PCBs (Arochlors)	mg/kg	1	<1
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	75

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

Sample Number	Parameter	Units	LOR

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Total Recoverable Metals in Soil by ICPOES (continued) — Method: ME-(AU)-[ENV]AN040/AN320

Sample Number	Parameter	Units	LOR	Result
LB090589.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
	Selenium, Se	mg/kg	3	<3
LB090590.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
	Selenium, Se	mg/kg	3	<3
LB090593.001	Arsenic, As	mg/kg	3	<3
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.3	<0.3
	Copper, Cu	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Nickel, Ni	mg/kg	0.5	<0.5
	Zinc, Zn	mg/kg	0.5	<0.5
	Selenium, Se	mg/kg	3	<3

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB090286.001	Arsenic, As	µg/L	1	<1
	Boron, B	µg/L	5	<5
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Selenium, Se	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

Trace Metals (Total) in Water by ICPMS — Method: ME-(AU)-[ENV]AN022/AN318

Sample Number	Parameter	Units	LOR	Result
LB090287.001	Total Arsenic	µg/L	1	<1
	Total Boron	µg/L	5	<5
	Total Cadmium	µg/L	0.1	<0.1
	Total Chromium	µg/L	1	<1
	Total Copper	µg/L	1	<1
	Total Lead	µg/L	1	<1
	Total Nickel	µg/L	1	<1
	Total Selenium	µg/L	1	<1
	Total Zinc	µg/L	5	<5

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

Sample Number	Parameter	Units	LOR	Result
LB090349.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110
LB090351.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

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

Sample Number	Parameter	Units	LOR	Result
LB090292.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

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

Sample Number		Parameter	Units	LOR	Result
LB090289.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		Iodomethane	mg/kg	5	<5
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		cis-1,4-dichloro-2-butene	mg/kg	1	<1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB090289.001	Monocyclic Aromatic Hydrocarbons	1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate	mg/kg	10	<10
		MEK (2-butanone)	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	127
		d4-1,2-dichloroethane (Surrogate)	%	-	108
		d8-toluene (Surrogate)	%	-	105
		Bromofluorobenzene (Surrogate)	%	-	119
	Totals	Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform	mg/kg	0.1	<0.1
		Bromodichloromethane	mg/kg	0.1	<0.1
		Chlorodibromomethane	mg/kg	0.1	<0.1
		Bromoform	mg/kg	0.1	<0.1
LB090355.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		Iodomethane	mg/kg	5	<5
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1
		trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		cis-1,4-dichloro-2-butene	mg/kg	1	<1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB090355.001	Halogenated Aromatics	4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate	mg/kg	10	<10
		MEK (2-butanone)	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	128
		d4-1,2-dichloroethane (Surrogate)	%	-	126
		d8-toluene (Surrogate)	%	-	114
		Bromofluorobenzene (Surrogate)	%	-	116
	Totals	Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform	mg/kg	0.1	<0.1
		Bromodichloromethane	mg/kg	0.1	<0.1
		Chlorodibromomethane	mg/kg	0.1	<0.1
		Bromoform	mg/kg	0.1	<0.1
LB090412.001	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		o-xylene	mg/kg	0.1	<0.1
	Polycyclic VOCs	Naphthalene	mg/kg	0.1	<0.1
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	104
		d4-1,2-dichloroethane (Surrogate)	%	-	103
		d8-toluene (Surrogate)	%	-	91
		Bromofluorobenzene (Surrogate)	%	-	97
	Totals	Total BTEX*	mg/kg	0.6	<0.6

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB090363.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB090363.001	Halogenated Aliphatics	Bromomethane	µg/L	10	<10
		Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		Iodomethane	µg/L	5	<5
		1,1-dichloroethene	µg/L	0.5	<0.5
		Dichloromethane (Methylene chloride)	µg/L	4	<4
		Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		cis-1,4-dichloro-2-butene	µg/L	1	<1
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	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	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
		Vinyl acetate	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	108
		d4-1,2-dichloroethane (Surrogate)	%	-	107

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB090363.001	Surrogates	d8-toluene (Surrogate)	%	-	102
		Bromofluorobenzene (Surrogate)	%	-	120
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5
LB090459.001	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	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	118
		d4-1,2-dichloroethane (Surrogate)	%	-	113
		d8-toluene (Surrogate)	%	-	92
		Bromofluorobenzene (Surrogate)	%	-	110

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB090289.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	109
		d4-1,2-dichloroethane (Surrogate)	%	-	110
		d8-toluene (Surrogate)	%	-	115
LB090355.001		TRH C6-C9	mg/kg	20	<20
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	102
		d4-1,2-dichloroethane (Surrogate)	%	-	100
		d8-toluene (Surrogate)	%	-	115

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB090363.001		TRH C6-C9	µg/L	40	<40
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	118
		d4-1,2-dichloroethane (Surrogate)	%	-	113
		d8-toluene (Surrogate)	%	-	92
		Bromofluorobenzene (Surrogate)	%	-	110

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Fluoride in Soil (Water Soluble 1:5 Extraction) by ISE

Method: ME-(AU)-[ENV]AN141

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.024	LB090799.017	Water Soluble Fluoride*	mg/kg	0.5	9.2	8.2	16	12
SE146247.050	LB090800.019	Water Soluble Fluoride*	mg/kg	0.5	0.7	0.7	82	1

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.013	LB090681.014	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE146247.022	LB090681.024	Mercury	mg/kg	0.01	<0.01	<0.01	200	0
SE146363.004	LB090682.014	Mercury	mg/kg	0.01	0.01	0.01	200	0
SE146371.003	LB090682.024	Mercury	mg/kg	0.01	<0.01	<0.01	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.012	LB090297.011	% Moisture	%w/w	0.5	24	24	34	0
SE146247.022	LB090297.022	% Moisture	%w/w	0.5	7.8	7.5	43	5
SE146247.032	LB090297.033	% Moisture	%w/w	0.5	23	22	34	7
SE146247.050	LB090297.047	% Moisture	%w/w	0.5	30	30	33	0
SE146369.002	LB090433.011	% Moisture	%w/w	0.5	12	12	38	7
SE146376.008	LB090433.022	% Moisture	%w/w	0.5	13	14	38	4
SE146379.003	LB090433.033	% Moisture	%w/w	0.5	8.7	9.1	41	4
SE146405.003	LB090433.038	% Moisture	%w/w	0.5	11.7	11.7	39	0

OC Pesticides in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.023	LB090349.025		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Lindane	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
			Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
			Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
			Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
			o,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Alpha Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			Gamma Chlordane	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	<0.1	<0.1	200	0
			p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
			Dieldrin	mg/kg	0.2	<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
			o,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Beta Endosulfan	mg/kg	0.2	<0.2	<0.2	200	0
			p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
			p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
			Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
			Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
			Endrin Ketone	mg/kg	0.1	<0.1	<0.1	200	0
			Isodrin	mg/kg	0.1	<0.1	<0.1	200	0
			Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.11	30	4

OP Pesticides in Soil

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.011	LB090349.027	Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
		Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
		Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
		Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
		Malathion	mg/kg	0.2	<0.2	<0.2	200	0
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
		Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

OP Pesticides in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.011	LB090349.027		Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	10
SE146247.023	LB090349.025		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	15
SE146247.050	LB090351.009		Dichlorvos	mg/kg	0.5	<0.5	<0.5	200	0
			Dimethoate	mg/kg	0.5	<0.5	<0.5	200	0
			Diazinon (Dimpylate)	mg/kg	0.5	<0.5	<0.5	200	0
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	200	0
			Malathion	mg/kg	0.2	<0.2	<0.2	200	0
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	<0.2	<0.2	200	0
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	200	0
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	200	0
			Methidathion	mg/kg	0.5	<0.5	<0.5	200	0
			Ethion	mg/kg	0.2	<0.2	<0.2	200	0
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	200	0
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	25

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.011	LB090349.027		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	0
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	0
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	10
SE146247.023	LB090349.025		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.023	LB090349.025		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	5
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	5
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	15
SE146247.050	LB090351.009		Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
			Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
			Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
			Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	200	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	134	0
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	175	0
			Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	30	10
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	30	3
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	25

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.009	LB090349.026	Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
		Arochlor 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
		Arochlor 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

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

PCBs in Soil (continued) — Method: ME-(AU)-[ENV]AN400/AN420

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.009	LB090349.026		Total PCBs (Arochlors)	mg/kg	1	<1	<1	200	0
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0	0	30	3
SE146247.026	LB090351.007		Arochlor 1016	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 1221	mg/kg	0.2	<0.2	<0.2	200	0
			Arochlor 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
			Arochlor 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)	mg/kg	-	0	0	30	0

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.012	LB090589.014	Arsenic, As	mg/kg	3	<3	3	63	5
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	144	0
		Chromium, Cr	mg/kg	0.3	11	14	34	24
		Copper, Cu	mg/kg	0.5	4.8	4.5	41	8
		Lead, Pb	mg/kg	1	27	24	34	11
		Nickel, Ni	mg/kg	0.5	2.3	2.3	52	1
		Zinc, Zn	mg/kg	0.5	30	27	37	11
		Selenium, Se	mg/kg	3	<3	<3	200	0
		Boron, B	mg/kg	5	<5	<5	200	0
SE146247.021	LB090589.024	Arsenic, As	mg/kg	3	<3	4	61	40
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	200	0
		Chromium, Cr	mg/kg	0.3	13	13	34	4
		Copper, Cu	mg/kg	0.5	17	17	33	4
		Lead, Pb	mg/kg	1	14	13	37	11
		Nickel, Ni	mg/kg	0.5	3.8	3.8	43	2
		Zinc, Zn	mg/kg	0.5	11	12	48	8
		Selenium, Se	mg/kg	3	<3	<3	200	0
		Boron, B	mg/kg	5	<5	<5	200	0
SE146247.031	LB090590.014	Lead, Pb	mg/kg	1	50	63	32	23
SE146247.040	LB090590.024	Lead, Pb	mg/kg	1	17	15	36	18
SE146371.002	LB090593.014	Arsenic, As	mg/kg	3	<3	<3	85	17
		Cadmium, Cd	mg/kg	0.3	<0.3	0.3	134	2
		Chromium, Cr	mg/kg	0.3	16	14	33	16
		Copper, Cu	mg/kg	0.5	64	79	31	21
		Lead, Pb	mg/kg	1	11	12	39	11
		Nickel, Ni	mg/kg	0.5	30	28	32	6
		Zinc, Zn	mg/kg	0.5	44	45	34	2
SE146376.005	LB090593.024	Arsenic, As	mg/kg	3	5	5	51	10
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	144	0
		Chromium, Cr	mg/kg	0.3	16	16	33	3
		Copper, Cu	mg/kg	0.5	6.1	6.5	38	6
		Lead, Pb	mg/kg	1	20	23	35	15
		Nickel, Ni	mg/kg	0.5	8.4	9.2	36	9
		Zinc, Zn	mg/kg	0.5	18	19	41	6

Trace Metals (Total) in Water by ICPMS — Method: ME-(AU)-[ENV]AN022/AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146317.014	LB090287.014	Total Arsenic	µg/L	1	<1	<1	200	0
		Total Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Total Chromium	µg/L	1	<1	<1	200	0
		Total Copper	µg/L	1	<1	<1	200	0
		Total Lead	µg/L	1	<1	<1	200	0
		Total Nickel	µg/L	1	<1	<1	200	0
		Total Zinc	µg/L	5	<5	<5	200	0
SE146319.001	LB090287.018	Total Arsenic	µg/L	1	21	21	20	4
		Total Cadmium	µg/L	0.1	<0.1	<0.1	168	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Trace Metals (Total) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN022/AN318

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146319.001	LB090287.018		Total Chromium	µg/L	1	37	36	18	2
			Total Copper	µg/L	1	23	23	19	0
			Total Lead	µg/L	1	23	22	19	2
			Total Nickel	µg/L	1	42	42	17	0
			Total Zinc	µg/L	5	72	71	22	1

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.011	LB090349.026		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE146247.023	LB090349.025		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE146247.050	LB090351.009		TRH C10-C14	mg/kg	20	<20	<20	200	0
			TRH C15-C28	mg/kg	45	<45	<45	200	0
			TRH C29-C36	mg/kg	45	<45	<45	200	0
			TRH C37-C40	mg/kg	100	<100	<100	200	0
			TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
			TRH C10-C40 Total	mg/kg	210	<210	<210	200	0
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	<25	<25	200	0
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	<25	<25	200	0
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0

VOC's in Soil

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.013	LB090289.015	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.4	5.4	50	1
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.7	5.9	50	3
			d8-toluene (Surrogate)	mg/kg	-	5.1	4.8	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.6	50	3
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE146247.023	LB090289.026	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5.0	50	6
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	4.8	50	2
			d8-toluene (Surrogate)	mg/kg	-	4.2	4.2	50	0

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOC's in Soil (continued)

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

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.023	LB090289.026	Surrogates	Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	4.7	50	1
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE146247.050	LB090355.012	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.6	4.3	50	6
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	4.5	50	8
			d8-toluene (Surrogate)	mg/kg	-	3.8	3.6	50	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	4.8	50	2
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE146327.016	LB090412.014	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.1	4.1	50	21
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.6	4.4	50	23
			d8-toluene (Surrogate)	mg/kg	-	6.0	4.9	50	20
			Bromofluorobenzene (Surrogate)	mg/kg	-	6.0	5.6	50	7
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
SE146363.006	LB090412.024	Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
		Aromatic	Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.3	6.0	50	13
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.7	6.4	50	12
			d8-toluene (Surrogate)	mg/kg	-	3.9	4.2	50	9
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	4.8	50	3
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.013	LB090289.014		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.4	5.4	30	1
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.7	5.9	30	3
			d8-toluene (Surrogate)	mg/kg	-	5.1	4.8	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.5	4.6	30	3
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE146247.023	LB090289.025		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5.0	30	6
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	4.8	30	2
			d8-toluene (Surrogate)	mg/kg	-	4.2	4.2	30	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	4.7	30	1
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE146247.050	LB090355.011		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.6	4.3	30	6

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE146247.050	LB090355.011	Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.9	4.5	30	8
			d8-toluene (Surrogate)	mg/kg	-	3.8	3.6	30	5
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	4.8	30	2
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090292.002	Naphthalene	µg/L	0.02	30	40	60 - 140	74
	2-methylnaphthalene	µg/L	0.01	33	40	60 - 140	82
	1-methylnaphthalene	µg/L	0.01	32	40	60 - 140	81
	Acenaphthylene	µg/L	0.01	34	40	60 - 140	85
	Acenaphthene	µg/L	0.01	37	40	60 - 140	92
	Fluorene	µg/L	0.01	26	40	60 - 140	65
	Phenanthrene	µg/L	0.01	25	40	60 - 140	62
	Anthracene	µg/L	0.01	28	40	60 - 140	71
	Fluoranthene	µg/L	0.01	31	40	60 - 140	76
	Pyrene	µg/L	0.01	34	40	60 - 140	86
	Benzo(a)anthracene	µg/L	0.01	28	40	60 - 140	71
	Chrysene	µg/L	0.01	27	40	60 - 140	67
	Benzo(b&j&k)fluoranthene	µg/L	0.02	74	80	60 - 140	92
	Benzo(a)pyrene	µg/L	0.01	41	40	60 - 140	101
	Indeno(1,2,3-cd)pyrene	µg/L	0.01	29	40	60 - 140	72
	Dibenzo(a&h)anthracene	µg/L	0.01	28	40	60 - 140	70
	Benzo(ghi)perylene	µg/L	0.01	26	40	60 - 140	65

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090681.002	Mercury	mg/kg	0.01	0.20	0.2	70 - 130	98
LB090682.002	Mercury	mg/kg	0.01	0.19	0.2	70 - 130	97

OC Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.002		Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	100
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	95
		Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	105
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	80
		Endrin	mg/kg	0.2	<0.2	0.2	60 - 140	85
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	75
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.11	0.15	40 - 130	70
LB090351.002		Heptachlor	mg/kg	0.1	0.3	0.2	60 - 140	125
		Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	115
		Delta BHC	mg/kg	0.1	0.3	0.2	60 - 140	125
		Dieldrin	mg/kg	0.2	<0.2	0.2	60 - 140	90
		Endrin	mg/kg	0.2	0.2	0.2	60 - 140	100
		p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	90
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.13	0.15	40 - 130	83

OP Pesticides in Soil

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.002		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	72
		Diazinon (Dimpylate)	mg/kg	0.5	1.9	2	60 - 140	94
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	2	60 - 140	81
		Ethion	mg/kg	0.2	1.4	2	60 - 140	71
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	74
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
LB090351.002		Dichlorvos	mg/kg	0.5	1.4	2	60 - 140	71
		Diazinon (Dimpylate)	mg/kg	0.5	1.7	2	60 - 140	85
		Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.4	2	60 - 140	70
		Ethion	mg/kg	0.2	1.6	2	60 - 140	81
	Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	72
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	106

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.028	Naphthalene	mg/kg	0.1	3.5	4	60 - 140	87
	2-methylnaphthalene	mg/kg	0.1	3.8	4	60 - 140	94
	1-methylnaphthalene	mg/kg	0.1	3.7	4	60 - 140	92
	Acenaphthylene	mg/kg	0.1	3.3	4	60 - 140	83
	Acenaphthene	mg/kg	0.1	3.6	4	60 - 140	90

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.

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.028		Fluorene	mg/kg	0.1	3.8	4	60 - 140	95
		Phenanthrene	mg/kg	0.1	3.7	4	60 - 140	92
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	87
		Fluoranthene	mg/kg	0.1	3.0	4	60 - 140	75
		Pyrene	mg/kg	0.1	3.3	4	60 - 140	83
		Benzo(a)anthracene	mg/kg	0.1	4.0	4	60 - 140	100
		Chrysene	mg/kg	0.1	3.6	4	60 - 140	89
		Benzo(b&j)fluoranthene	mg/kg	0.1	3.4	4	60 - 140	86
		Benzo(k)fluoranthene	mg/kg	0.1	3.6	4	60 - 140	89
		Benzo(a)pyrene	mg/kg	0.1	3.3	4	60 - 140	83
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	3.0	4	60 - 140	75
		Dibenzo(a&h)anthracene	mg/kg	0.1	3.0	4	60 - 140	76
		Benzo(ghi)perylene	mg/kg	0.1	3.0	4	60 - 140	76
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	74
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	88
LB090351.010		Naphthalene	mg/kg	0.1	3.5	4	60 - 140	88
		2-methylnaphthalene	mg/kg	0.1	3.5	4	60 - 140	87
		1-methylnaphthalene	mg/kg	0.1	3.5	4	60 - 140	87
		Acenaphthylene	mg/kg	0.1	3.5	4	60 - 140	88
		Acenaphthene	mg/kg	0.1	4.7	4	60 - 140	117
		Fluorene	mg/kg	0.1	4.5	4	60 - 140	113
		Phenanthrene	mg/kg	0.1	3.1	4	60 - 140	77
		Anthracene	mg/kg	0.1	3.5	4	60 - 140	86
		Fluoranthene	mg/kg	0.1	3.8	4	60 - 140	95
		Pyrene	mg/kg	0.1	4.1	4	60 - 140	102
		Benzo(a)anthracene	mg/kg	0.1	2.8	4	60 - 140	71
		Chrysene	mg/kg	0.1	3.7	4	60 - 140	92
		Benzo(b&j)fluoranthene	mg/kg	0.1	3.9	4	60 - 140	97
		Benzo(k)fluoranthene	mg/kg	0.1	3.4	4	60 - 140	84
		Benzo(a)pyrene	mg/kg	0.1	3.5	4	60 - 140	86
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	3.2	4	60 - 140	81
		Dibenzo(a&h)anthracene	mg/kg	0.1	3.8	4	60 - 140	94
		Benzo(ghi)perylene	mg/kg	0.1	2.9	4	60 - 140	71
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	40 - 130	102
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	78
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.5	40 - 130	70

PCBs in Soil

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	91
LB090351.002	Arochlor 1260	mg/kg	0.2	0.4	0.4	60 - 140	109

Total Recoverable Metals in Soil by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090589.002	Arsenic, As	mg/kg	3	49	50	80 - 120	98
	Cadmium, Cd	mg/kg	0.3	50	50	80 - 120	100
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	96
	Copper, Cu	mg/kg	0.5	49	50	80 - 120	98
	Lead, Pb	mg/kg	1	49	50	80 - 120	97
	Nickel, Ni	mg/kg	0.5	49	50	80 - 120	98
	Zinc, Zn	mg/kg	0.5	49	50	80 - 120	99
	Selenium, Se	mg/kg	3	49	50	80 - 120	97
	Boron, B	mg/kg	5	46	50	80 - 120	92
LB090590.002	Arsenic, As	mg/kg	3	48	50	80 - 120	96
	Cadmium, Cd	mg/kg	0.3	49	50	80 - 120	97
	Chromium, Cr	mg/kg	0.3	47	50	80 - 120	94
	Copper, Cu	mg/kg	0.5	48	50	80 - 120	96
	Lead, Pb	mg/kg	1	48	50	80 - 120	96
	Nickel, Ni	mg/kg	0.5	48	50	80 - 120	96
	Zinc, Zn	mg/kg	0.5	48	50	80 - 120	97

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.

Total Recoverable Metals in Soil by ICPOES (continued)

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090590.002	Selenium, Se	mg/kg	3	48	50	80 - 120	95
	Boron, B	mg/kg	5	45	50	80 - 120	90
LB090593.002	Arsenic, As	mg/kg	3	49	50	80 - 120	99
	Cadmium, Cd	mg/kg	0.3	50	50	80 - 120	100
	Chromium, Cr	mg/kg	0.3	48	50	80 - 120	97
	Copper, Cu	mg/kg	0.5	49	50	80 - 120	99
	Lead, Pb	mg/kg	1	49	50	80 - 120	99
	Nickel, Ni	mg/kg	0.5	49	50	80 - 120	98
	Zinc, Zn	mg/kg	0.5	50	50	80 - 120	100
	Selenium, Se	mg/kg	3	49	50	80 - 120	98
	Boron, B	mg/kg	5	47	50	80 - 120	95

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090286.002	Arsenic, As	µg/L	1	19	20	80 - 120	97
	Boron, B	µg/L	5	24	20	80 - 120	120
	Cadmium, Cd	µg/L	0.1	20	20	80 - 120	101
	Chromium, Cr	µg/L	1	21	20	80 - 120	105
	Copper, Cu	µg/L	1	21	20	80 - 120	104
	Lead, Pb	µg/L	1	21	20	80 - 120	107
	Nickel, Ni	µg/L	1	21	20	80 - 120	103
	Selenium, Se	µg/L	1	19	20	80 - 120	95
	Zinc, Zn	µg/L	5	21	20	80 - 120	104

Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090287.002	Total Arsenic	µg/L	1	20	20	80 - 120	99
	Total Boron	µg/L	5	20	20	80 - 120	100
	Total Cadmium	µg/L	0.1	20	20	80 - 120	101
	Total Chromium	µg/L	1	21	20	80 - 120	106
	Total Copper	µg/L	1	21	20	80 - 120	107
	Total Lead	µg/L	1	21	20	80 - 120	105
	Total Nickel	µg/L	1	22	20	80 - 120	108
	Total Selenium	µg/L	1	21	20	80 - 120	105
	Total Zinc	µg/L	5	22	20	80 - 120	110

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090349.002		TRH C10-C14	mg/kg	20	47	40	60 - 140	118
		TRH C15-C28	mg/kg	45	49	40	60 - 140	123
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	85
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	47	40	60 - 140	118
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	113
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	80
LB090351.002		TRH C10-C14	mg/kg	20	41	40	60 - 140	103
		TRH C15-C28	mg/kg	45	<45	40	60 - 140	110
		TRH C29-C36	mg/kg	45	<45	40	60 - 140	70
	TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	41	40	60 - 140	103
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	98
		TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	70

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090292.002		TRH C10-C14	µg/L	50	1400	1200	60 - 140	119
		TRH C15-C28	µg/L	200	1600	1200	60 - 140	133
		TRH C29-C36	µg/L	200	1600	1200	60 - 140	131
	TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	1500	1200	60 - 140	127
		TRH >C16-C34 (F3)	µg/L	500	1600	1200	60 - 140	135
		TRH >C34-C40 (F4)	µg/L	500	760	600	60 - 140	126

VOC's in Soil

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

Sample Number	Parameter	Units	LOR

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090289.002	Fumigants	2,2-dichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	78
		1,2-dichloropropane	mg/kg	0.1	0.6	0.5	60 - 140	114
		cis-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	74
		trans-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	76
		1,2-dibromoethane (EDB)	mg/kg	0.1	0.5	0.5	60 - 140	106
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.5	60 - 140	118
		Chloromethane	mg/kg	1	<1	0.5	60 - 140	80
		Vinyl chloride (Chloroethene)	mg/kg	0.1	0.4	0.5	60 - 140	76
		Bromomethane	mg/kg	1	<1	0.5	60 - 140	104
		Chloroethane	mg/kg	1	<1	0.5	60 - 140	114
		Trichlorofluoromethane	mg/kg	1	<1	0.5	60 - 140	104
		Iodomethane	mg/kg	5	<5	0.5	60 - 140	116
		1,1-dichloroethene	mg/kg	0.1	2.1	2.56	60 - 140	83
		Dichloromethane (Methylene chloride)	mg/kg	0.5	0.5	0.5	60 - 140	108
		Allyl chloride	mg/kg	0.1	0.5	0.5	60 - 140	104
		trans-1,2-dichloroethene	mg/kg	0.1	0.5	0.5	60 - 140	92
		1,1-dichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	80
		cis-1,2-dichloroethene	mg/kg	0.1	0.4	0.5	60 - 140	70
		Bromochloromethane	mg/kg	0.1	0.5	0.5	60 - 140	94
		1,2-dichloroethane	mg/kg	0.1	2.5	2.56	60 - 140	96
		1,1,1-trichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	76
		1,1-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	74
		Carbon tetrachloride	mg/kg	0.1	0.4	0.5	60 - 140	82
		Dibromomethane	mg/kg	0.1	0.6	0.5	60 - 140	118
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	2.7	2.56	60 - 140	106
		1,1,2-trichloroethane	mg/kg	0.1	0.6	0.5	60 - 140	120
		1,3-dichloropropane	mg/kg	0.1	0.6	0.5	60 - 140	120
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	0.5	0.5	60 - 140	104
		1,1,1,2-tetrachloroethane	mg/kg	0.1	0.4	0.5	60 - 140	86
		cis-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	108
		1,1,2,2-tetrachloroethane	mg/kg	0.1	0.5	0.5	60 - 140	96
		1,2,3-trichloropropane	mg/kg	0.1	0.6	0.5	60 - 140	110
		trans-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	70
		1,2-dibromo-3-chloropropane	mg/kg	0.1	0.4	0.5	60 - 140	86
		Hexachlorobutadiene	mg/kg	0.1	0.5	0.5	60 - 140	104
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	3.1	2.56	60 - 140	122
		Bromobenzene	mg/kg	0.1	0.5	0.5	60 - 140	108
		2-chlorotoluene	mg/kg	0.1	0.5	0.5	60 - 140	94
		4-chlorotoluene	mg/kg	0.1	0.5	0.5	60 - 140	94
		1,3-dichlorobenzene	mg/kg	0.1	0.6	0.5	60 - 140	116
		1,4-dichlorobenzene	mg/kg	0.1	0.6	0.5	60 - 140	114
		1,2-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	96
		1,2,4-trichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
		1,2,3-trichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	96
	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.4	2.9	60 - 140	84
		Toluene	mg/kg	0.1	2.3	2.9	60 - 140	80
		Ethylbenzene	mg/kg	0.1	2.3	2.9	60 - 140	78
		m/p-xylene	mg/kg	0.2	4.1	5.9	60 - 140	70
		o-xylene	mg/kg	0.1	1.9	2.9	60 - 140	67
		Styrene (Vinyl benzene)	mg/kg	0.1	0.4	0.5	60 - 140	78
		Isopropylbenzene (Cumene)	mg/kg	0.1	0.4	0.5	60 - 140	78
		n-propylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	82
		1,3,5-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	88
		tert-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	78
		1,2,4-trimethylbenzene	mg/kg	0.1	0.5	0.5	60 - 140	90
		sec-butylbenzene	mg/kg	0.1	0.5	0.5	60 - 140	90
		p-isopropyltoluene	mg/kg	0.1	0.4	0.5	60 - 140	84
		n-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	70
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	0.4	0.5	60 - 140	80
		2-nitropropane	mg/kg	10	<10	0.5	60 - 140	120
	Oxygenated	Acetone (2-propanone)	mg/kg	10	<10	0.5	60 - 140	110

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090289.002	Oxygenated Compounds	MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	0.5	0.5	60 - 140	104
		Vinyl acetate	mg/kg	10	<10	0.5	60 - 140	86
		MEK (2-butanone)	mg/kg	10	<10	2.5	60 - 140	96
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.5	60 - 140	92
		2-hexanone (MBK)	mg/kg	5	<5	0.5	60 - 140	114
	Polycyclic	Naphthalene	mg/kg	0.1	0.4	0.5	60 - 140	82
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	0.5	60 - 140	72
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.6	5	60 - 140	92
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.0	5	60 - 140	79
		d8-toluene (Surrogate)	mg/kg	-	4.6	5	60 - 140	93
		Bromofluorobenzene (Surrogate)	mg/kg	-	5.0	5	60 - 140	100
	Trihalomethanes	Chloroform	mg/kg	0.1	2.7	2.56	60 - 140	104
		Bromodichloromethane	mg/kg	0.1	0.5	0.5	60 - 140	106
		Chlorodibromomethane	mg/kg	0.1	0.6	0.5	60 - 140	114
		Bromoform	mg/kg	0.1	0.6	0.5	60 - 140	114
LB090355.002	Fumigants	2,2-dichloropropane	mg/kg	0.1	0.4	0.5	60 - 140	72
		1,2-dichloropropane	mg/kg	0.1	0.5	0.5	60 - 140	102
		cis-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	82
		trans-1,3-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	82
		1,2-dibromoethane (EDB)	mg/kg	0.1	0.5	0.5	60 - 140	92
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.5	60 - 140	112
		Chloromethane	mg/kg	1	<1	0.5	60 - 140	80
		Vinyl chloride (Chloroethene)	mg/kg	0.1	0.4	0.5	60 - 140	70
		Bromomethane	mg/kg	1	<1	0.5	60 - 140	82
		Chloroethane	mg/kg	1	<1	0.5	60 - 140	116
		Trichlorofluoromethane	mg/kg	1	<1	0.5	60 - 140	116
		Iodomethane	mg/kg	5	<5	0.5	60 - 140	88
		1,1-dichloroethene	mg/kg	0.1	2.1	2.56	60 - 140	83
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	0.5	60 - 140	88
		Allyl chloride	mg/kg	0.1	0.6	0.5	60 - 140	114
		trans-1,2-dichloroethene	mg/kg	0.1	0.5	0.5	60 - 140	94
		1,1-dichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	70
		cis-1,2-dichloroethene	mg/kg	0.1	0.4	0.5	60 - 140	70
		Bromochloromethane	mg/kg	0.1	0.5	0.5	60 - 140	94
		1,2-dichloroethane	mg/kg	0.1	2.5	2.56	60 - 140	96
		1,1,1-trichloroethane	mg/kg	0.1	0.4	0.5	60 - 140	70
		1,1-dichloropropene	mg/kg	0.1	0.4	0.5	60 - 140	70
		Carbon tetrachloride	mg/kg	0.1	0.4	0.5	60 - 140	82
		Dibromomethane	mg/kg	0.1	0.5	0.5	60 - 140	102
		Trichloroethene (Trichloroethylene -TCE)	mg/kg	0.1	2.7	2.56	60 - 140	106
		1,1,2-trichloroethane	mg/kg	0.1	0.6	0.5	60 - 140	120
		1,3-dichloropropane	mg/kg	0.1	0.5	0.5	60 - 140	104
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	0.5	0.5	60 - 140	90
		1,1,1,2-tetrachloroethane	mg/kg	0.1	0.6	0.5	60 - 140	118
		cis-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	86
		1,1,2,2-tetrachloroethane	mg/kg	0.1	0.4	0.5	60 - 140	74
		1,2,3-trichloropropane	mg/kg	0.1	0.5	0.5	60 - 140	90
		trans-1,4-dichloro-2-butene	mg/kg	1	<1	0.5	60 - 140	76
		1,2-dibromo-3-chloropropane	mg/kg	0.1	0.4	0.5	60 - 140	76
		Hexachlorobutadiene	mg/kg	0.1	0.5	0.5	60 - 140	90
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	3.1	2.56	60 - 140	122
		Bromobenzene	mg/kg	0.1	0.5	0.5	60 - 140	98
		2-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	86
		4-chlorotoluene	mg/kg	0.1	0.4	0.5	60 - 140	86
		1,3-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	102
		1,4-dichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	102
		1,2-dichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	86
		1,2,4-trichlorobenzene	mg/kg	0.1	0.4	0.5	60 - 140	80
		1,2,3-trichlorobenzene	mg/kg	0.1	0.5	0.5	60 - 140	90
	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.7	2.9	60 - 140	94
		Toluene	mg/kg	0.1	2.5	2.9	60 - 140	87

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.

VOC's in Soil (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090355.002	Monocyclic Aromatic	Ethylbenzene	mg/kg	0.1	2.3	2.9	60 - 140	81
		m/p-xylene	mg/kg	0.2	5.2	5.9	60 - 140	87
		o-xylene	mg/kg	0.1	2.4	2.9	60 - 140	83
		Styrene (Vinyl benzene)	mg/kg	0.1	0.4	0.5	60 - 140	76
		Isopropylbenzene (Cumene)	mg/kg	0.1	0.4	0.5	60 - 140	74
		n-propylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	76
		1,3,5-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	82
		tert-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	72
		1,2,4-trimethylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	84
		sec-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	82
		p-isopropyltoluene	mg/kg	0.1	0.4	0.5	60 - 140	80
		n-butylbenzene	mg/kg	0.1	0.4	0.5	60 - 140	88
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	0.4	0.5	60 - 140	78
		2-nitropropane	mg/kg	10	<10	0.5	60 - 140	114
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10	0.5	60 - 140	114
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	0.5	0.5	60 - 140	100
		Vinyl acetate	mg/kg	10	<10	0.5	60 - 140	82
		MEK (2-butanone)	mg/kg	10	<10	2.5	60 - 140	87
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.5	60 - 140	96
		2-hexanone (MBK)	mg/kg	5	<5	0.5	60 - 140	102
	Polycyclic	Naphthalene	mg/kg	0.1	0.4	0.5	60 - 140	86
	Sulphonated	Carbon disulfide	mg/kg	0.5	0.6	0.5	60 - 140	120
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	4.8	5	60 - 140	95
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	4.3	5	60 - 140	87
		d8-toluene (Surrogate)	mg/kg	-	3.5	5	60 - 140	71
		Bromofluorobenzene (Surrogate)	mg/kg	-	6.2	5	60 - 140	123
	Trihalomethanes	Chloroform	mg/kg	0.1	2.7	2.56	60 - 140	104
		Bromodichloromethane	mg/kg	0.1	0.6	0.5	60 - 140	122
		Chlorodibromomethane	mg/kg	0.1	0.5	0.5	60 - 140	98
		Bromoform	mg/kg	0.1	0.4	0.5	60 - 140	88
LB090412.002	Monocyclic Aromatic	Benzene	mg/kg	0.1	2.2	2.9	60 - 140	77
		Toluene	mg/kg	0.1	3.7	2.9	60 - 140	127
		Ethylbenzene	mg/kg	0.1	3.4	2.9	60 - 140	118
		m/p-xylene	mg/kg	0.2	7.1	5.8	60 - 140	122
		o-xylene	mg/kg	0.1	3.3	2.9	60 - 140	115
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	3.6	5	60 - 140	71
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	3.7	5	60 - 140	74
		d8-toluene (Surrogate)	mg/kg	-	6.0	5	60 - 140	120
		Bromofluorobenzene (Surrogate)	mg/kg	-	6.5	5	60 - 140	129

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090363.002	Fumigants	2,2-dichloropropane	µg/L	0.5	7.5	10	60 - 140	75
		1,2-dichloropropane	µg/L	0.5	11	10	60 - 140	108
		cis-1,3-dichloropropene	µg/L	0.5	7.9	10	60 - 140	79
		trans-1,3-dichloropropene	µg/L	0.5	7.4	10	60 - 140	74
		1,2-dibromoethane (EDB)	µg/L	0.5	12	10	60 - 140	121
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	12	10	60 - 140	123
		Chloromethane	µg/L	5	13	10	60 - 140	129
		Vinyl chloride (Chloroethene)	µg/L	0.3	13	10	60 - 140	129
		Bromomethane	µg/L	10	12	10	60 - 140	118
		Chloroethane	µg/L	5	11	10	60 - 140	114
		Trichlorofluoromethane	µg/L	1	10	10	60 - 140	99
		Iodomethane	µg/L	5	8	10	60 - 140	78
		1,1-dichloroethene	µg/L	0.5	9.3	10	60 - 140	93
		Dichloromethane (Methylene chloride)	µg/L	4	12	10	60 - 140	116
		Allyl chloride	µg/L	2	9	10	60 - 140	87
		trans-1,2-dichloroethene	µg/L	0.5	9.2	10	60 - 140	92
		1,1-dichloroethane	µg/L	0.5	11	10	60 - 140	109
		cis-1,2-dichloroethene	µg/L	0.5	9.6	10	60 - 140	96
		Bromochloromethane	µg/L	0.5	11	10	60 - 140	106

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.

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090363.002	Halogenated Aliphatics	1,2-dichloroethane	µg/L	0.5	11	10	60 - 140	110
		1,1,1-trichloroethane	µg/L	0.5	12	10	60 - 140	117
		1,1-dichloropropene	µg/L	0.5	7.2	10	60 - 140	72
		Carbon tetrachloride	µg/L	0.5	13	10	60 - 140	127
		Dibromomethane	µg/L	0.5	10	10	60 - 140	103
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	10	10	60 - 140	102
		1,1,2-trichloroethane	µg/L	0.5	12	10	60 - 140	118
		1,3-dichloropropane	µg/L	0.5	11	10	60 - 140	114
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	12	10	60 - 140	123
		1,1,1,2-tetrachloroethane	µg/L	0.5	9.5	10	60 - 140	95
		cis-1,4-dichloro-2-butene	µg/L	1	7	10	60 - 140	73
		1,1,2,2-tetrachloroethane	µg/L	0.5	13	10	60 - 140	126
		1,2,3-trichloropropane	µg/L	0.5	12	10	60 - 140	124
		trans-1,4-dichloro-2-butene	µg/L	1	8	10	60 - 140	80
		1,2-dibromo-3-chloropropane	µg/L	0.5	7.5	10	60 - 140	75
		Hexachlorobutadiene	µg/L	0.5	10	10	60 - 140	102
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	12	10	60 - 140	122
		Bromobenzene	µg/L	0.5	11	10	60 - 140	115
		2-chlorotoluene	µg/L	0.5	11	10	60 - 140	114
		4-chlorotoluene	µg/L	0.5	9.2	10	60 - 140	92
		1,3-dichlorobenzene	µg/L	0.5	10	10	60 - 140	103
		1,4-dichlorobenzene	µg/L	0.3	10	10	60 - 140	103
		1,2-dichlorobenzene	µg/L	0.5	7.2	10	60 - 140	72
		1,2,4-trichlorobenzene	µg/L	0.5	7.1	10	60 - 140	71
		1,2,3-trichlorobenzene	µg/L	0.5	7.2	10	60 - 140	72
	Monocyclic Aromatic	Benzene	µg/L	0.5	9.6	10	60 - 140	96
		Toluene	µg/L	0.5	10	10	60 - 140	103
		Ethylbenzene	µg/L	0.5	9.8	10	60 - 140	98
		m/p-xylene	µg/L	1	22	20	60 - 140	109
		o-xylene	µg/L	0.5	12	10	60 - 140	118
		Styrene (Vinyl benzene)	µg/L	0.5	8.2	10	60 - 140	82
		Isopropylbenzene (Cumene)	µg/L	0.5	9.3	10	60 - 140	93
		n-propylbenzene	µg/L	0.5	8.2	10	60 - 140	82
		1,3,5-trimethylbenzene	µg/L	0.5	9.2	10	60 - 140	92
		tert-butylbenzene	µg/L	0.5	7.7	10	60 - 140	77
		1,2,4-trimethylbenzene	µg/L	0.5	8.0	10	60 - 140	80
		sec-butylbenzene	µg/L	0.5	8.4	10	60 - 140	84
		p-isopropyltoluene	µg/L	0.5	7.3	10	60 - 140	73
		n-butylbenzene	µg/L	0.5	8.2	10	60 - 140	82
	Nitrogenous	Acrylonitrile	µg/L	0.5	9.3	10	60 - 140	93
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	10	10	60 - 140	103
		MtBE (Methyl-tert-butyl ether)	µg/L	2	7	10	60 - 140	72
		Vinyl acetate	µg/L	10	12	10	60 - 140	117
		MEK (2-butanone)	µg/L	10	47	50	60 - 140	93
		MIBK (4-methyl-2-pentanone)	µg/L	5	7	10	60 - 140	71
		2-hexanone (MBK)	µg/L	5	9	10	60 - 140	94
	Polycyclic	Naphthalene	µg/L	0.5	7.9	10	60 - 140	79
	Sulphonated	Carbon disulfide	µg/L	2	12	10	60 - 140	123
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.2	5	60 - 140	104
		d8-toluene (Surrogate)	µg/L	-	4.6	5	60 - 140	93
		Bromofluorobenzene (Surrogate)	µg/L	-	5.7	5	60 - 140	113
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	12	10	60 - 140	117
		Bromodichloromethane (THM)	µg/L	0.5	11	10	60 - 140	115
		Dibromochloromethane (THM)	µg/L	0.5	12	10	60 - 140	124
		Bromoform (THM)	µg/L	0.5	13	10	60 - 140	128
LB090459.002	Monocyclic Aromatic	Benzene	µg/L	0.5	52	45.45	60 - 140	114
		Toluene	µg/L	0.5	52	45.45	60 - 140	114
		Ethylbenzene	µg/L	0.5	52	45.45	60 - 140	114
		m/p-xylene	µg/L	1	100	90.9	60 - 140	112
		o-xylene	µg/L	0.5	51	45.45	60 - 140	112

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.

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090459.002	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d8-toluene (Surrogate)	µg/L	-	5.3	5	60 - 140	105
		Bromofluorobenzene (Surrogate)	µg/L	-	4.6	5	60 - 140	92

Volatile Petroleum Hydrocarbons in Soil — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090289.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	87
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	79
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.0	5	60 - 140	99
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.0	5	60 - 140	100
		d8-toluene (Surrogate)	mg/kg	-	4.9	5	60 - 140	98
		Bromofluorobenzene (Surrogate)	mg/kg	-	3.8	5	60 - 140	75
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	116
LB090355.002		TRH C6-C10	mg/kg	25	<25	24.65	60 - 140	90
		TRH C6-C9	mg/kg	20	<20	23.2	60 - 140	71
	Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.4	5	60 - 140	107
		d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.5	5	60 - 140	110
		d8-toluene (Surrogate)	mg/kg	-	5.0	5	60 - 140	100
		Bromofluorobenzene (Surrogate)	mg/kg	-	4.7	5	60 - 140	94
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	7.25	60 - 140	98

Volatile Petroleum Hydrocarbons in Water — Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB090363.002		TRH C6-C10	µg/L	50	980	946.63	60 - 140	104
		TRH C6-C9	µg/L	40	730	818.71	60 - 140	89
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	5.1	5	60 - 140	102
		d8-toluene (Surrogate)	µg/L	-	5.3	5	60 - 140	105
		Bromofluorobenzene (Surrogate)	µg/L	-	4.6	5	60 - 140	92
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	670	639.67	60 - 140	105

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.

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.042	LB090693.004	Mercury	mg/L	0.00005	0.0079	0.00007	0.008	98

Mercury (total) in Water

Method: ME-(AU)-[ENV]AN311/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.042	LB090695.004	Total Mercury	mg/L	0.00005	0.0082	0.00017	-	-

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.001	LB090681.004	Mercury	mg/kg	0.01	0.22	<0.01	0.2	109
SE146247.023	LB090682.004	Mercury	mg/kg	0.01	0.19	0.01	0.2	88

OC Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.004	LB090349.026		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	0.2	<0.1	0.2	100
			Aldrin	mg/kg	0.1	0.2	<0.1	0.2	95
			Beta BHC	mg/kg	0.1	<0.1	<0.1	-	-
			Delta BHC	mg/kg	0.1	0.2	<0.1	0.2	105
			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 Chlordane	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	0.2	<0.2	<0.2	0.2	80
			Endrin	mg/kg	0.2	<0.2	<0.2	0.2	85
			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	0.2	<0.1	0.2	75
			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 Ketone	mg/kg	0.1	<0.1	<0.1	-	-
			Isodrin	mg/kg	0.1	<0.1	<0.1	-	-
			Mirex	mg/kg	0.1	<0.1	<0.1	-	-
		Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.12	0.11	-	78

OP Pesticides in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.004	LB090349.026		Dichlorvos	mg/kg	0.5	1.4	<0.5	2	71
			Dimethoate	mg/kg	0.5	<0.5	<0.5	-	-
			Diazinon (Dimpylate)	mg/kg	0.5	1.9	<0.5	2	95
			Fenitrothion	mg/kg	0.2	<0.2	<0.2	-	-
			Malathion	mg/kg	0.2	<0.2	<0.2	-	-
			Chlorpyrifos (Chlorpyrifos Ethyl)	mg/kg	0.2	1.6	<0.2	2	79
			Parathion-ethyl (Parathion)	mg/kg	0.2	<0.2	<0.2	-	-
			Bromophos Ethyl	mg/kg	0.2	<0.2	<0.2	-	-
			Methidathion	mg/kg	0.5	<0.5	<0.5	-	-
			Ethion	mg/kg	0.2	1.5	<0.2	2	77
			Azinphos-methyl (Guthion)	mg/kg	0.2	<0.2	<0.2	-	-
		Surrogates	2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	70
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	82

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.

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.004	LB090349.026		Naphthalene	mg/kg	0.1	3.5	<0.1	4	87
			2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
			Acenaphthylene	mg/kg	0.1	3.3	<0.1	4	83
			Acenaphthene	mg/kg	0.1	3.6	<0.1	4	89
			Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
			Phenanthrene	mg/kg	0.1	3.8	<0.1	4	94
			Anthracene	mg/kg	0.1	3.5	<0.1	4	87
			Fluoranthene	mg/kg	0.1	3.2	<0.1	4	79
			Pyrene	mg/kg	0.1	3.2	<0.1	4	81
			Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(a)pyrene	mg/kg	0.1	4.4	<0.1	4	110
			Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
			Dibenzo(a&h)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
			Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ	0.2	4.4	<0.2	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	4.6	<0.3	-	-
			Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	4.5	<0.2	-	-
			Total PAH (18)	mg/kg	0.8	28	<0.8	-	-
		Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.4	-	78
			2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	70
			d14-p-terphenyl (Surrogate)	mg/kg	-	0.4	0.4	-	82

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.001	LB090589.004	Arsenic, As	mg/kg	3	49	5	50	88
		Cadmium, Cd	mg/kg	0.3	46	<0.3	50	92
		Chromium, Cr	mg/kg	0.3	51	5.0	50	91
		Copper, Cu	mg/kg	0.5	48	1.4	50	93
		Lead, Pb	mg/kg	1	51	9	50	84
		Nickel, Ni	mg/kg	0.5	46	<0.5	50	91
		Zinc, Zn	mg/kg	0.5	51	5.9	50	90
		Selenium, Se	mg/kg	3	8	<3	10	80
SE146247.022	LB090590.004	Arsenic, As	mg/kg	3	48	<3	50	95
		Cadmium, Cd	mg/kg	0.3	48	<0.3	50	96
		Chromium, Cr	mg/kg	0.3	50	2.2	50	95
		Copper, Cu	mg/kg	0.5	54	5.8	50	97
		Lead, Pb	mg/kg	1	56	9	50	94
		Nickel, Ni	mg/kg	0.5	49	1.5	50	95
		Zinc, Zn	mg/kg	0.5	81	32	50	98
		Selenium, Se	mg/kg	3	9	<3	10	92
		Boron, B	mg/kg	5	9	<5	10	82
SE146247.041	LB090593.004	Lead, Pb	mg/kg	1	130	12	50	228 ⑨

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.042	LB090286.004	Arsenic, As	µg/L	1	20	1	20	97
		Boron, B	µg/L	5	57	35	20	109
		Cadmium, Cd	µg/L	0.1	21	<0.1	20	102
		Chromium, Cr	µg/L	1	22	1	20	103
		Copper, Cu	µg/L	1	24	3	20	107
		Lead, Pb	µg/L	1	23	1	20	108
		Nickel, Ni	µg/L	1	23	2	20	104
		Selenium, Se	µg/L	1	22	<1	20	106
		Zinc, Zn	µg/L	5	56	36	20	99

Trace Metals (Total) in Water by ICPMS — Method: ME-(AU)-[ENV]AN022/AN318

QC Sample	Sample Number	Parameter	Units	LOR

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.

Trace Metals (Total) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN022/AN318

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.042	LB090287.004		Total Arsenic	µg/L	1	22	2	20	105
			Total Boron	µg/L	5	63	40	20	113
			Total Cadmium	µg/L	0.1	22	<0.1	20	107
			Total Chromium	µg/L	1	24	2	20	112
			Total Copper	µg/L	1	26	4	20	113
			Total Lead	µg/L	1	28	5	20	114
			Total Nickel	µg/L	1	26	3	20	113
			Total Selenium	µg/L	1	25	2	20	116
			Total Zinc	µg/L	5	73	50	20	117

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.001	LB090349.027		TRH C10-C14	mg/kg	20	46	<20	40	115
			TRH C15-C28	mg/kg	45	49	<45	40	123
			TRH C29-C36	mg/kg	45	<45	<45	40	85
			TRH C37-C40	mg/kg	100	<100	<100	-	-
			TRH C10-C36 Total	mg/kg	110	130	<110	-	-
			TRH C10-C40 Total	mg/kg	210	<210	<210	-	-
		TRH F Bands	TRH >C10-C16 (F2)	mg/kg	25	46	<25	40	115
			TRH >C10-C16 (F2) - Naphthalene	mg/kg	25	46	<25	-	-
			TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	88
			TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

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

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146327.001	LB090412.025	Monocyclic	Benzene	mg/kg	0.1	3.0	<0.1	2.9	104
		Aromatic	Toluene	mg/kg	0.1	2.4	<0.1	2.9	80
			Ethylbenzene	mg/kg	0.1	2.0	<0.1	2.9	69
			m/p-xylene	mg/kg	0.2	5.8	<0.2	5.8	98
			o-xylene	mg/kg	0.1	2.7	<0.1	2.9	93
		Polycyclic	Naphthalene	mg/kg	0.1	0.2	0.3	-	-
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.6	6.2	-	113
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	6.0	5.6	-	119
			d8-toluene (Surrogate)	mg/kg	-	3.6	3.8	-	72
			Bromofluorobenzene (Surrogate)	mg/kg	-	4.8	4.8	-	95
		Totals	Total Xylenes*	mg/kg	0.3	8.5	<0.3	-	-
			Total BTEX*	mg/kg	0.6	16	<0.6	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433/AN434/AN410

QC Sample	Sample Number		Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE146247.001	LB090289.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	83
			TRH C6-C9	mg/kg	20	<20	<20	23.2	74
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.5	4.7	-	109
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.9	4.9	-	118
			d8-toluene (Surrogate)	mg/kg	-	5.6	3.9	-	112
			Bromofluorobenzene (Surrogate)	mg/kg	-	3.8	4.6	-	75
		VPH F	Benzene (F0)	mg/kg	0.1	2.2	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	115
SE146247.024	LB090355.004		TRH C6-C10	mg/kg	25	<25	<25	24.65	88
			TRH C6-C9	mg/kg	20	<20	<20	23.2	78
		Surrogates	Dibromofluoromethane (Surrogate)	mg/kg	-	5.0	4.6	-	99
			d4-1,2-dichloroethane (Surrogate)	mg/kg	-	5.2	5.0	-	104
			d8-toluene (Surrogate)	mg/kg	-	4.5	3.7	-	89
			Bromofluorobenzene (Surrogate)	mg/kg	-	5.6	4.6	-	112
		VPH F	Benzene (F0)	mg/kg	0.1	1.9	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	7.25	133

MATRIX SPIKE DUPLICATES

SE146247 R0

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.

No matrix spike duplicates were required for this job.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	NATA accreditation does not cover tthe performance of this service.
-	Sample not analysed for this analyte.
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.
②	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.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	28

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
SGS Reference	**SE146247 R0**
Date Received	20 Nov 2015
Date Reported	02 Dec 2015

COMMENTS

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

No respirable fibres detected in all samples using trace analysis technique.

A portion of the sample supplied has been sub-sampled for asbestos according to SGS In-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied.
SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container.

Asbestos analysed by Approved Identifiers Ravee Sivasubramaniam and Yusuf Kuthpudin .

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Job activated after the recommended maximum holding time had elapsed.
Micro subcontracted to Sonic Food & Water Testing, 31-33 Lawson Street Penrith NSW 2750, NATA Accreditation Number: 4034.
TOC (combustion) subcontracted to SGS Perth Environmental, 28 Reid Rd Perth

SIGNATORIES

Andy Sutton
Senior Organic Chemist

Dong Liang
Metals/Inorganics Team Leader

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

Ravee Sivasubramaniam
Asbestos Analyst/Hygiene Team Leade

ANALYTICAL REPORT

RESULTS

Fibre Identification in soil — Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Fibre Identification	
SE146247.003	DUPGS181115	Soil	52g Sand, Soil, Plant Matter	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.007	T_5_ESMW05_0.1	Soil	54g Clay, Sand, Soil	17 Nov 2015	No Asbestos Found	<0.01
SE146247.008	T_2_ESSB02_0.1	Soil	41g Clay, Sand, Soil, Rocks	17 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.010	T_ESMW07_0.5	Soil	77g Clay, Soil	16 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.012	T_ESMW08_0.1	Soil	73g Clay, Soil	16 Nov 2015	No Asbestos Found	<0.01
SE146247.014	T_ESMW09_0.5	Soil	60g Clay	16 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.016	T_ESMW10_0.5	Soil	51g Clay, Soil	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.018	T_ESSB06_0.1	Soil	79g Soil, Plant Matter	16 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.020	T_ESSB09_0.1	Soil	50g Clay, Soil	18 Nov 2015	No Asbestos Found	<0.01
SE146247.021	T_ESSB09_1	Soil	37g Clay, Soil	18 Nov 2015	No Asbestos Found	<0.01
SE146247.022	T_ESSB10_0.1	Soil	63g Sand, Soil	19 Nov 2015	No Asbestos Found	<0.01
SE146247.024	T_SB07_0.5	Soil	26g Soil, Plant Matter	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.027	T_2_SG01	Soil	37g Soil, Plant Matter	17 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.028	T_2_SG02	Soil	31g Soil, Rocks, Plant Matter	17 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.029	T_2_SG03	Soil	46g Sand, Soil, Plant Matter	17 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.030	T_2_SG04	Soil	67g Sand, Soil, Rocks	17 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.031	T_2_SG05	Soil	44g Sand, Soil, Plant Matter	19 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.032	T_SG01	Soil	61g Sand, Soil, Plant Matter	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.033	T_SG02	Soil	83g Sand, Soil, Plant Matter	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.034	T_SG03	Soil	65g Soil, Plant Matter	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.035	T_SG04	Soil	58g Soil	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.036	T_SG05	Soil	68g Soil	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.037	T_SG06	Soil	74g Soil	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.038	T_SG07	Soil	40g Clay, Soil	18 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.039	T_SG08	Soil	63g Sand, Soil	19 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.040	T_SG09	Soil	64g Sand, Soil, Plant Matter	19 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.041	T_SG10	Soil	60g Clay, Soil, Plant Matter	19 Nov 2015	No Asbestos Found Organic Fibres Detected	<0.01
SE146247.049	T_ESSB08_0.1	Soil	55g Clay, Soil	18 Nov 2015	No Asbestos Found	<0.01

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN602	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic `clues`, which provide a reasonable degree of certainty, dispersion staining is a mandatory `clue` for positive identification. If sufficient `clues` are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602	Fibres/material that cannot be unequivocably identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf).
AN602	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states:"Depending upon sample condition and fibre type, the detection limit of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602	The sample can be reported “no asbestos found at the reporting limit of 0.1 g/kg” (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no ‘respirable’ fibres): (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg: and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Sampled by the client.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.
Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.
Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

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.sgs.com.au/~/media/Local/Australia/Documents/Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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CHAIN OF CUSTODY

Environmental
PROVIDING BENEFITS

Client: Environmental Strategies	**Client Project Number** 15107
Contact Person: Ryan Wells	
Project Mgr: Ryan Wells	**PO No.:**
Sampler: JO, GS	**SGS Quote No. :** SY150422-1IS (revised with LOR's)
Address: Suite 15201, 2 Locomotive Street Eveleigh NSW 2065	**Date results required:** 5 day TAT (standard)
Phone: (02) 9690 2555 **Mob:** 0434 657 155	**Report format:** Esdat
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report) accounts@environmentalstrategies.com.au (invoice) natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report) david.burns@sustain450.com.au (COC, SRN, Lab Report)	**Lab Comments:**
	Cooling Method: Crushed ICE Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B. Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required													Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (10)	TRH	BTEX	VOCs	PAHs	PCBs	TOC (combustion)	Lead	Asbestos	Fluoride	faecal coliforms	total coliforms	OCP/ OPP	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
1	DUPGS161115		16/11/2015	Sediment	x	x	x	x	x		x											1			2	
2	T_6_SD01		16/11/2015	Sediment	x	x	x	x	x		x											1			2	
3	DUPGS181115		18/11/2015	soil								X	X	X											2	
4	DUPJO181115		18/11/2015	Soil	x	x	x	x	x								X								1	
5	T_1_ESMW01	0.1	19/11/2015	Soil											x	x									1	
	T_1_ESMW01	0.5	19/11/2015	Soil														x							1	
	T_1_ESMW01	1	19/11/2015	Soil														x							1	
6	T_1_ESMW01	2	19/11/2015	Soil											x	x									1	
7	T_5_ESMW05	0.1	17/11/2015	soil	x	x	x	x	x	X			x	x											1	
	T_5_ESMW05	0.5	17/11/2015	soil														x							1	
	T_5_ESMW05	1	17/11/2015	soil														x							1	
	T_5_ESMW05	2.5	17/11/2015	soil														x							1	
8	T_2_ESSB02	0.1	17/11/2015	soil	x	x	x	x	x	x			x	x			x								2	
	T_2_ESSB02	0.5	17/11/2015	soil														x							2	
	T_2_ESSB02	1	17/11/2015	soil														x							2	
9	T_2_ESSB02	2	17/11/2015	soil	x	x	x		x	x				x	x	x									2	
	T_2_ESSB02	3	17/11/2015	soil														x							2	
	T_ESMW07	0.1	16/11/2015	Soil														X							1	
10	T_ESMW07	0.5	16/11/2015	water	X	X	x	X	X				x	x			x								1	
	T_ESMW07	1	16/11/2015	Water														1							1	
11	T_ESMW07	2	16/11/2015	Soil	X	X	x		X								x								1	
	T_ESMW07	3	16/11/2015	Soil														1							1	
12	T_ESMW08	0.1	16/11/2015	Soil	X	X	X	X	X				x	x			x								1	
	T_ESMW08	0.5	16/11/2015	Soil														x							1	
13	T_ESMW08	1	16/11/2015	Soil	X	X	X		X								x								1	
	T_ESMW08	2	16/11/2015	Soil														x							1	
	T_ESMW08	3	16/11/2015	Soil														x							1	
	T_ESMW09	0.1	16/11/2015	Soil														x							1	
14	T_ESMW09	0.5	16/11/2015	Soil	x	x	x	x	x				x	x			x								1	
	T_ESMW09	1	16/11/2015	Soil														x							1	

SGS Alexandria Environmental

SE146247 COC
Received: 20 – Nov – 2015

Relinquished by: Environmental Strategies	**Received & Reliquished by (SGS Muswellbrook or Courier):**	**Lab Use Only:**
Print Name: Ryan Wells	**Print Name:**	
Date & Time: 20/11/2015	**Receipt Date & Time:** **Relinquished Date & Time:**	**Lab Report Number:**
Signature	**Signature**	**Samples received:** Cool or Ambient (circle one)
Received by (primary lab): SGS Sydney	**Received by (secondary lab):** ELS	**Temperature Received at:** (if applicable) 1.4 °C
Print Name: Chris Yan	**Print Name:**	**Transported by:** Hand delievered/courier
Date & Time: 20/11/15 2/2	**Date & Time:**	**Security Seal Applied and Intact?** (Yes/No)
Signature	**Signature**	**Refer to Laboratory SRN for additional sample receipt/integrity details**

CHAIN OF CUSTODY

Environmental

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
Sampler: JO, GS, MD
Address: Suite 15201, 2 Locomotive Street
Eveleigh NSW 2065

Phone: (02) 9690 2555 **Mob:** 0434 657 155
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report)
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natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required													Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (10)	TRH	BTEX	VOCs	PAHs	PCBs	TOC Combustion)	Lead	Asbestos	Fluoride	faecal coliforms	total coliforms	OCP/ OPP	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
15	T_ESMW09	2	16/11/2015	Soil	X	X	X		X					x			x								1	
	T_ESMW09	3	16/11/2015	Soil														x							1	
	T_ESMW10	0.1	18/11/2015	Soil														X							1	
16	T_ESMW10	0.5	18/11/2015	Soil	X	X	X	X	X				x	X			X								1	
17	T_ESMW10	1	18/11/2015	Soil	x	x	x		x								X								1	
	T_ESMW10	2	18/11/2015	Soil														X							1	
	T_ESMW10	3	18/11/2015	Soil														X							1	
18	T_ESSB06	0.1	16/11/2015	Soil	X	X	X	X	X				x	x			x								1	
	T_ESSB06	0.5	16/11/2015	Soil														X							1	
19	T_ESSB06	1	16/11/2015	Soil	X	X	X		X					x			x								1	
	T_ESSB06	2	16/11/2015	Soil														X							1	
	T_ESSB06	3	16/11/2015	Soil														x							1	
20	T_ESSB09	0.1	18/11/2015	Soil	X	X	X	X	X				x	x			x								1	
	T_ESSB09	0.5	18/11/2015	Soil														X							1	
21	T_ESSB09	1	18/11/2015	Soil	X	X	X		X				x	x			x								1	
	T_ESSB09	1.9	18/11/2015	Soil														X							1	
22	T_ESSB10	0.1	19/11/2015	Soil	X	X	X	X	X				x	x			x								1	
	T_ESSB10	0.5	19/11/2015	Soil														x							1	
23	T_ESSB10	1	19/11/2015	Soil	X	X	x		X					x			x								1	
	T_ESSB10	1.7	19/11/2015	Soil														X							1	
24	T_SB07	0.1	18/11/2015	Soil	X	X	x		X				x	x			x								1	
25	T_SB07	0.5	18/11/2015	Soil	X	X	x	X	X								x								1	
	T_SB07	1	18/11/2015	soil														X							1	
	T_SB07	1.5	18/11/2015	soil														X							1	
26	T_5_ESMW05	2	17/11/2015	soil	X	X	X		X	X				X											1	

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 20/11/2015
Signature

Received by (primary lab): SGS Sydney
Print Name: Charly Yu
Date & Time: 2016/11/20 2pm
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature

Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 1.1 °C
Transported by: Hand delievered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

CHAIN OF CUSTODY

Environmental
PROVIDING BENEFITS

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
Sampler: JO, GS, MD
Address: Suite 15201, 2 Locomotive Street
Eveleigh NSW 2065

Phone: (02) 9690 2555 **Mob:** 0434 657 155
Email: ryanwells@environmentalstrategies.com.au (COC, SRN, Lab Report)
accounts@environmentalstrategies.com.au (invoice)
natashapasley@environmentalstrategies.com.au (COC, SRN, Lab Report)
david.burns@sustain450.com.au (COC, SRN, Lab Report)

Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 5 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required													Bottles Used							Comments
SGS Lab ID	Client Sample ID or information	Depth (m)	Date Sampled	Type of sample	Metals (10)	TRH	BTEX	VOCs	PAHs	PCBs	TOC Combustion)	Lead	Asbestos	Fluoride	faecal coliforms	total coliforms	OCP/OPP	Hold	40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Bag	Jar	Provide as much information about the sample as you can
27	T_2_SG01		17/11/2015	Soil								X	X	X											2	
28	T_2_SG02		17/11/2015	Soil								X	X	X											2	
29	T_2_SG03		17/11/2015	Soil								X	X	X											2	
30	T_2_SG04		17/11/2015	Soil								X	X	X											2	
31	T_2_SG05		19/11/2015	Soil								X	x	x											2	
32	T_SG01		18/11/2015	soil								X	x	x											2	
33	T_SG02		18/11/2015	soil								X	x	x											2	
34	T_SG03		18/11/2015	soil								X	x	x											2	
35	T_SG04		18/11/2015	soil								X	x	x											2	
36	T_SG05		18/11/2015	soil								X	x	x											2	
37	T_SG06		18/11/2015	soil								X	x	x											2	
38	T_SG07		18/11/2015	soil								X	x	x											2	
39	T_SG08		19/11/2015	Soil								X	x	x											2	
40	T_SG09		19/11/2015	Soil								X	x	x											2	
41	T_SG10		19/11/2015	Soil								X	x	x											2	
42	DUPGS161115b		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
43	T_6_SW01		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
44	T_SW02		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			
45	Trip Blank			water			X																		1	
46	Trip Spike			Water			X												1							
47	Trip Blank			Soil			X																		1	
48	Trip Spike			Soil			X												1							
49	T_ESSB08	0.1	18/11/2015	Soil	X	X	X	X	X				X	X			X								1	
	T_ESSB08	0.5	18/11/2015	Soil														X							1	
50	T_ESSB08	1	18/11/2015	Soil	X	X	X		X					X			X								1	
	T_ESSB08	2	18/11/2015	Soil														X							1	
	DUPJO161115			Soil														X							1	
51	TRIPGS161115b		16/11/2015	Water	X	X	X	X	X										2	1	1	1	1			Please send to Envirolab
52	TRIPGS181115		18/11/2015	soil								X	X	X											2	Please send to Envirolab

Relinquished by: Environmental Strategies
Print Name: Ryan Wells
Date & Time: 20/11/2015
Signature
Received by (primary lab): SGS Sydney
Print Name: Emily Yu
Date & Time: 20/11/15
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature
Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 1.1°C
Transported by: Hand delievered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

CERTIFICATE OF ANALYSIS

W1518643
[]

S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246855516
Customer Reference Number:	
Site:	AS LISTED X3 SE146247
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	19/11/15,0000
Date and Time of Testing:	21/11/15,0700
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS	
SITE	FAECAL COLIFORM COUNT	COLIFORM COUNT	E.COLI COUNT
005	500	11,000	
006	<200	<200	
009	<200	<200	

The above are reported as most probable number/colony forming units per 100ml

METHODS

* Faecal Coliform Count - A.S 4276.6 - 2007 Thermotolerant Coliforms and E.coli by most probable number method.
* Total Coliform A.S.4276.5 - 2007 Water Coliforms by Most probable number method.

(Key: < = Less than or no growth detected of the target bacteria. > = Greater than)

Note that the time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:25/11/15

T.Morgan Laboratory Manager | T.Shetty Quality Manager | H.Sialepis Technical Officer | L.Vanhoff Technical Officer | K.McClenahan Scientific Officer | M.Lee Scientific Officer | P.Campora Scientific Officer | R.Bhatt Scientific Officer

NATA ACCREDITED FOR TECHNICAL COMPETENCE
Accreditation No. 4034

This document shall not be reproduced, except in full.

SAMPLE RECEIPT ADVICE

SE146247

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street Eveleigh NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	50

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Fri 20/11/2015
Report Due	Tue 1/12/2015
SGS Reference	**SE146247**

SUBMISSION DETAILS

This is to confirm that 50 samples were received on Friday 20/ 11/2015. Results are expected to be ready by Tuesday 1/12/2015. Please quote SGS reference SE146247 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	2 Sediment, 43 Soil, 5 Wat	Type of documentation received	COC
Date documentation received	20/11/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	1.1°C
Sample container provider	Other Lab	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

PRIVILEGED AND CONFIDENTIAL
`Not to be distributed or disclosed to any person other than Environmental Strategies'
32 soil samples unmarked for analyses on the COC have been placed on hold.
Asbestos will be sub sampled from the jar provided, as a separate bag was not supplied for analysis.
Micro subcontracted to Sonic Food & Water Testing, 31-33 Lawson Street Penrith NSW 2750, NATA Accreditation Number: 4034.
TOC (combustion) subcontracted to SGS Perth Environmental, 28 Reid Rd Perth

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS , all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx as at the date of this document.
Attention is drawn to the limitations of liability and to the clauses of indemnification.

SAMPLE RECEIPT ADVICE

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fluoride in Soil (Water Soluble 1:5 Extraction) by	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	DUPGS161115	-	-	-	25	-	10	79	8
002	T_6_SD01	-	-	-	25	-	10	79	8
003	DUPGS181115	1	-	-	-	-	-	-	-
004	DUPJO181115	-	28	13	25	-	10	79	8
007	T_5_ESMW05_0.1	1	-	-	25	11	10	79	8
008	T_2_ESSB02_0.1	1	28	13	25	11	10	79	8
009	T_2_ESSB02_2	1	-	-	25	11	10	12	8
010	T_ESMW07_0.5	1	28	13	25	-	10	79	8
011	T_ESMW07_2	-	28	13	25	-	10	12	8
012	T_ESMW08_0.1	1	28	13	25	-	10	79	8
013	T_ESMW08_1	-	28	13	25	-	10	12	8
014	T_ESMW09_0.5	1	28	13	25	-	10	79	8
015	T_ESMW09_2	1	28	13	25	-	10	12	8
016	T_ESMW10_0.5	1	28	13	25	-	10	79	8
017	T_ESMW10_1	-	28	13	25	-	10	12	8
018	T_ESSB06_0.1	1	28	13	25	-	10	79	8
019	T_ESSB06_1	1	28	13	25	-	10	12	8
020	T_ESSB09_0.1	1	28	13	25	-	10	79	8
021	T_ESSB09_1	1	28	13	25	-	10	12	8
022	T_ESSB10_0.1	1	28	13	25	-	10	79	8
023	T_ESSB10_1	1	28	13	25	-	10	12	8
024	T_SB07_0.5	1	28	13	25	-	10	12	8

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

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fluoride in Soil (Water Soluble 1:5 Extraction) by	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	PCBs in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
025	T_SB07_0.5	-	28	13	25	-	10	79	8
026	T_5_ESMW05_2	1	-	-	25	11	10	12	8
027	T_2_SG01	1	-	-	-	-	-	-	-
028	T_2_SG02	1	-	-	-	-	-	-	-
029	T_2_SG03	1	-	-	-	-	-	-	-
030	T_2_SG04	1	-	-	-	-	-	-	-
031	T_2_SG05	1	-	-	-	-	-	-	-
032	T_SG01	1	-	-	-	-	-	-	-
033	T_SG02	1	-	-	-	-	-	-	-
034	T_SG03	1	-	-	-	-	-	-	-
035	T_SG04	1	-	-	-	-	-	-	-
036	T_SG05	1	-	-	-	-	-	-	-
037	T_SG06	1	-	-	-	-	-	-	-
038	T_SG07	1	-	-	-	-	-	-	-
039	T_SG08	1	-	-	-	-	-	-	-
040	T_SG09	1	-	-	-	-	-	-	-
041	T_SG10	1	-	-	-	-	-	-	-
045	Trip Blank	-	-	-	-	-	-	12	-
046	Trip Spike	-	-	-	-	-	-	12	-

CONTINUED OVERLEAF

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SAMPLE RECEIPT ADVICE

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED

Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fluoride in Soil (Water Soluble 1:5 Extraction) by	OC Pesticides in Soil	OP Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
049	T_ESSB08_0.1	1	28	13	25	10	79	8
050	T_ESSB08_1	1	28	13	25	10	12	8

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
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Please indicate as soon as possible should your request differ from these details .
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SAMPLE RECEIPT ADVICE

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES
001	DUPGS161115	-	1	1	9
002	T_6_SD01	-	1	1	9
003	DUPGS181115	2	-	1	1
004	DUPJO181115	-	1	1	9
007	T_5_ESMW05_0.1	2	1	1	9
008	T_2_ESSB02_0.1	2	1	1	9
009	T_2_ESSB02_2	-	1	1	9
010	T_ESMW07_0.5	2	1	1	9
011	T_ESMW07_2	-	1	1	9
012	T_ESMW08_0.1	2	1	1	9
013	T_ESMW08_1	-	1	1	9
014	T_ESMW09_0.5	2	1	1	9
015	T_ESMW09_2	-	1	1	9
016	T_ESMW10_0.5	2	1	1	9
017	T_ESMW10_1	-	1	1	9
018	T_ESSB06_0.1	2	1	1	9
019	T_ESSB06_1	-	1	1	9
020	T_ESSB09_0.1	2	1	1	9
021	T_ESSB09_1	2	1	1	9
022	T_ESSB10_0.1	2	1	1	9
023	T_ESSB10_1	-	1	1	9
024	T_SB07_0.5	2	1	1	9

CONTINUED OVERLEAF

The above table represents SGS Environmental Services' interpretation of the client-supplied Chain Of Custody document.
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SAMPLE RECEIPT ADVICE

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
025	T_SB07_0.5	-	1	1	9	-	-	-
026	T_5_ESMW05_2	-	1	1	9	-	-	-
027	T_2_SG01	2	-	1	1	-	-	-
028	T_2_SG02	2	-	1	1	-	-	-
029	T_2_SG03	2	-	1	1	-	-	-
030	T_2_SG04	2	-	1	1	-	-	-
031	T_2_SG05	2	-	1	1	-	-	-
032	T_SG01	2	-	1	1	-	-	-
033	T_SG02	2	-	1	1	-	-	-
034	T_SG03	2	-	1	1	-	-	-
035	T_SG04	2	-	1	1	-	-	-
036	T_SG05	2	-	1	1	-	-	-
037	T_SG06	2	-	1	1	-	-	-
038	T_SG07	2	-	1	1	-	-	-
039	T_SG08	2	-	1	1	-	-	-
040	T_SG09	2	-	1	1	-	-	-
041	T_SG10	2	-	1	1	-	-	-
042	DUPGS161115b	-	-	-	-	9	79	8
043	T_6_SW01	-	-	-	-	9	79	8
044	T_SW02	-	-	-	-	9	79	8
045	Trip Blank	-	-	1	-	-	-	-
047	Trip Blank	-	-	-	-	-	12	-
048	Trip Spike	-	-	-	-	-	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

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Mercury in Soil	Moisture Content	Total Recoverable Metals in Soil by ICPOES
049	T_ESSB08_0.1	2	1	1	9
050	T_ESSB08_1	-	1	1	9

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

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED

Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Sample Subcontracted
001	DUPGS161115	1
002	T_6_SD01	1
005	T_1_ESMW01_0.1	1
006	T_1_ESMW01_2	1
009	T_2_ESSB02_2	1

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

SE146247

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Low Level PAH (Poly Aromatic Hydrocarbons) in	Mercury (dissolved) in Water	Mercury (total) in Water	Trace Metals (Dissolved) in Water by ICPMS	Trace Metals (Total) in Water by ICPMS
042	DUPGS161115b	23	1	1	9	9
043	T_6_SW01	23	1	1	9	9
044	T_SW02	23	1	1	9	9

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 .

ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	02 8594 0499
Email	huong.crawford@sgs.com
Project	**SE146247**
Order Number	(Not specified)
Samples	2

LABORATORY DETAILS

Manager	Ros Ma
Laboratory	SGS Perth Environmental
Address	28 Reid Rd Perth Airport WA 6105
Telephone	(08) 9373 3500
Facsimile	(08) 9373 3556
Email	au.environmental.perth@sgs.com
SGS Reference	**PE103615 R0**
Date Received	25 Nov 2015
Date Reported	01 Dec 2015

COMMENTS

Accredited for compliance with ISO/IEC 17025. NATA accredited laboratory 2562(898/20210).

SIGNATORIES

Michael McKay
Inorganics and ARD Supervisor

Parameter	Units	LOR	Sample Number Sample Matrix Sample Date Sample Name	PE103615.001 Sediment 16 Nov 2015 SE146247.001 (DUPGS161115)	PE103615.002 Sediment 16 Nov 2015 SE146247.002 (T_6_SD01)
Total Carbon and TOC by LECO Furnace Method: AN203 Tested: 1/12/2015					
Total Organic Carbon (TOC)	%w/w	0.02		**0.86**	**0.53**

QC SUMMARY

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.

Total Carbon and TOC by LECO Furnace **Method: ME-(AU)-[ENV]AN203**

Parameter	QC Reference	Units	LOR	MB	DUP %RPD	LCS %Recovery
Total Organic Carbon (TOC)	LB111245	%w/w	0.02	<0.02	2%	98 - 102%

METHOD SUMMARY

METHOD	METHODOLOGY SUMMARY
AN203	The carbon in the sample is oxidised to carbon dioxide gas in a tube furnace using oxygen to aid the oxidation process. The evolved carbon dioxide is measure by an infra red cell. The infra red cell output is calibrated against the value of a known standard sample to provide the total carbon value of the unknown sample.
AN203	The sample is pre-treated with hydrochloric acid to remove inorganic carbon/carbonate. The residual non-carbonate carbon is oxidised to carbon dioxide gas in a tube furnace using oxygen to aid the oxidation process. The evolved carbon dioxide is measure by an infra red cell. The infra red cell output is calibrated against the value of a known standard sample to provide the total organic carbon value of the unknown sample.

FOOTNOTES

IS	Insufficient sample for analysis.	LOR	Limit of Reporting
LNR	Sample listed, but not received.	↑↓	Raised or Lowered Limit of Reporting
*	NATA accreditation does not cover the performance of this service.	QFH	QC result is above the upper tolerance
**	Indicative data, theoretical holding time exceeded.	QFL	QC result is below the lower tolerance
		-	The sample was not analysed for this analyte
		NVL	Not Validated

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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STATEMENT OF QA/QC PERFORMANCE

PE103615 R0

CLIENT DETAILS

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Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street NSW 2015
Telephone	02 9690 2555 / 0408 649 917
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Project	**SE146247**
Order Number	(Not specified)
Samples	2

LABORATORY DETAILS

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Telephone	(08) 9373 3500
Facsimile	(08) 9373 3556
Email	au.environmental.perth@sgs.com
SGS Reference	**PE103615 R0**
Date Received	25 Nov 2015
Date Reported	01 Dec 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met (within the SGS Perth Environmental laboratory).

SAMPLE SUMMARY

Sample counts by matrix	2 Sediment	Type of documentation received	COC
Date documentation received	25/11/2015	Samples received in good order	Yes
Samples received without headspace	NA	Sample temperature upon receipt	Ambient
Sample container provider	Client	Turnaround time requested	4 Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	None	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	None

HOLDING TIME SUMMARY

PE103615 R0

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.

Total Carbon and TOC by LECO Furnace

Method: ME-(AU)-[ENV]AN203

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
SE146247.001	PE103615.001	LB111245	16 Nov 2015	25 Nov 2015	14 Dec 2015	01 Dec 2015	14 Dec 2015	01 Dec 2015
SE146247.002 (T_6_SD01)	PE103615.002	LB111245	16 Nov 2015	25 Nov 2015	14 Dec 2015	01 Dec 2015	14 Dec 2015	01 Dec 2015

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

No surrogates were required for this job.

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Total Carbon and TOC by LECO Furnace

Method: ME-(AU)-[ENV]AN203

Sample Number	Parameter	Units	LOR	Result
LB111245.001	Total Organic Carbon (TOC)	%w/w	0.02	<0.02

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Total Carbon and TOC by LECO Furnace

Method: ME-(AU)-[ENV]AN203

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
PE103616.001	LB111245.009	Total Organic Carbon (TOC)	%w/w	0.02	0.69735	0.68435	33	2

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.

Total Carbon and TOC by LECO Furnace

Method: ME-(AU)-[ENV]AN203

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB111245.002	Total Organic Carbon (TOC)	%w/w	0.02	1.0	1	80 - 120	102
LB111245.012	Total Organic Carbon (TOC)	%w/w	0.02	0.98	1	80 - 120	98

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.

No matrix spikes were required for this job.

MATRIX SPIKE DUPLICATES

PE103615 R0

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.

No matrix spike duplicates were required for this job.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	NATA accreditation does not cover tthe performance of this service.
-	Sample not analysed for this analyte.
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.
②	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.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Low surrogate recovery due to the sample emulsifying during extraction.
†	Refer to Analytical Report comments for further information.

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ANALYTICAL REPORT

Accreditation No. 2562

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
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Project	**15107**
Order Number	(Not specified)
Samples	20

LABORATORY DETAILS

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SGS Reference	**SE147182 R0**
Date Received	16/12/2015
Date Reported	21/12/2015

COMMENTS

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

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PAH-The Limit of Reporting (LOR) has been raised due to interferences from the sample matrix.

Microbiological analysis subcontracted to Sonic Food & Water Testing, 31-33 Lawson Street Penrith NSW 2750, NATA Accreditation Number: 4034

SIGNATORIES

Dong Liang
Metals/Inorganics Team Leader

Kamrul Ahsan
Senior Chemist

Ly Kim Ha
Organic Section Head

VOCs in Water [AN433/AN434] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	-	<1.5	-	-	-
Total BTEX	µg/L	3	-	<3	-	-	-
Dichlorodifluoromethane (CFC-12)	µg/L	5	-	<5	-	-	-
Chloromethane	µg/L	5	-	<5	-	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	-	<0.3	-	-	-
Bromomethane	µg/L	10	-	<10	-	-	-
Chloroethane	µg/L	5	-	<5	-	-	-
Trichlorofluoromethane	µg/L	1	-	<1	-	-	-
Acetone (2-propanone)	µg/L	10	-	<10	-	-	-
Iodomethane	µg/L	5	-	<5	-	-	-
1,1-dichloroethene	µg/L	0.5	-	<0.5	-	-	-
Acrylonitrile	µg/L	0.5	-	<0.5	-	-	-
Dichloromethane (Methylene chloride)	µg/L	4	-	<4	-	-	-
Allyl chloride	µg/L	2	-	<2	-	-	-
Carbon disulfide	µg/L	2	-	<2	-	-	-
trans-1,2-dichloroethene	µg/L	0.5	-	<0.5	-	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	-	<2	-	-	-
1,1-dichloroethane	µg/L	0.5	-	<0.5	-	-	-
Vinyl acetate	µg/L	10	-	<10	-	-	-
MEK (2-butanone)	µg/L	10	-	<10	-	-	-
cis-1,2-dichloroethene	µg/L	0.5	-	<0.5	-	-	-
Bromochloromethane	µg/L	0.5	-	<0.5	-	-	-
Chloroform (THM)	µg/L	0.5	-	<0.5	-	-	-
2,2-dichloropropane	µg/L	0.5	-	<0.5	-	-	-
1,2-dichloroethane	µg/L	0.5	-	<0.5	-	-	-
1,1,1-trichloroethane	µg/L	0.5	-	<0.5	-	-	-
1,1-dichloropropene	µg/L	0.5	-	<0.5	-	-	-
Carbon tetrachloride	µg/L	0.5	-	<0.5	-	-	-
Dibromomethane	µg/L	0.5	-	<0.5	-	-	-
1,2-dichloropropane	µg/L	0.5	-	<0.5	-	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	-	<0.5	-	-	-
2-nitropropane	µg/L	100	-	<100	-	-	-
Bromodichloromethane (THM)	µg/L	0.5	-	<0.5	-	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	-	<5	-	-	-
cis-1,3-dichloropropene	µg/L	0.5	-	<0.5	-	-	-
trans-1,3-dichloropropene	µg/L	0.5	-	<0.5	-	-	-
1,1,2-trichloroethane	µg/L	0.5	-	<0.5	-	-	-
1,3-dichloropropane	µg/L	0.5	-	<0.5	-	-	-
Dibromochloromethane (THM)	µg/L	0.5	-	<0.5	-	-	-
2-hexanone (MBK)	µg/L	5	-	<5	-	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	-	<0.5	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	-	<0.5	-	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	-	<0.5	-	-	-
Chlorobenzene	µg/L	0.5	-	<0.5	-	-	-
Bromoform (THM)	µg/L	0.5	-	<0.5	-	-	-
cis-1,4-dichloro-2-butene	µg/L	1	-	<1	-	-	-
Styrene (Vinyl benzene)	µg/L	0.5	-	<0.5	-	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	-	<0.5	-	-	-
1,2,3-trichloropropane	µg/L	0.5	-	<0.5	-	-	-
trans-1,4-dichloro-2-butene	µg/L	1	-	<1	-	-	-

VOCs in Water [AN433/AN434] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Isopropylbenzene (Cumene)	µg/L	0.5	-	<0.5	-	-	-
Bromobenzene	µg/L	0.5	-	<0.5	-	-	-
n-propylbenzene	µg/L	0.5	-	<0.5	-	-	-
2-chlorotoluene	µg/L	0.5	-	<0.5	-	-	-
4-chlorotoluene	µg/L	0.5	-	<0.5	-	-	-
1,3,5-trimethylbenzene	µg/L	0.5	-	<0.5	-	-	-
tert-butylbenzene	µg/L	0.5	-	<0.5	-	-	-
1,2,4-trimethylbenzene	µg/L	0.5	-	<0.5	-	-	-
sec-butylbenzene	µg/L	0.5	-	<0.5	-	-	-
1,3-dichlorobenzene	µg/L	0.5	-	<0.5	-	-	-
1,4-dichlorobenzene	µg/L	0.3	-	<0.3	-	-	-
p-isopropyltoluene	µg/L	0.5	-	<0.5	-	-	-
1,2-dichlorobenzene	µg/L	0.5	-	<0.5	-	-	-
n-butylbenzene	µg/L	0.5	-	<0.5	-	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	-	<0.5	-	-	-
1,2,4-trichlorobenzene	µg/L	0.5	-	<0.5	-	-	-
Hexachlorobutadiene	µg/L	0.5	-	<0.5	-	-	-
1,2,3-trichlorobenzene	µg/L	0.5	-	<0.5	-	-	-
Total VOC	µg/L	10	-	-	-	-	-

VOCs in Water [AN433/AN434] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Benzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
m/p-xylene	µg/L	1	<1	<1	<1	<1	<1
o-xylene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Naphthalene	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Total Xylenes	µg/L	1.5	<1.5	-	-	-	<1.5
Total BTEX	µg/L	3	<3	-	-	-	<3
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	-	-	-	<5
Chloromethane	µg/L	5	<5	-	-	-	<5
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	-	-	-	<0.3
Bromomethane	µg/L	10	<10	-	-	-	<10
Chloroethane	µg/L	5	<5	-	-	-	<5
Trichlorofluoromethane	µg/L	1	<1	-	-	-	<1
Acetone (2-propanone)	µg/L	10	<10	-	-	-	<10
Iodomethane	µg/L	5	<5	-	-	-	<5
1,1-dichloroethene	µg/L	0.5	<0.5	-	-	-	<0.5
Acrylonitrile	µg/L	0.5	<0.5	-	-	-	<0.5
Dichloromethane (Methylene chloride)	µg/L	4	<4	-	-	-	<4
Allyl chloride	µg/L	2	<2	-	-	-	<2
Carbon disulfide	µg/L	2	<2	-	-	-	<2
trans-1,2-dichloroethene	µg/L	0.5	<0.5	-	-	-	<0.5
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	-	-	-	<2
1,1-dichloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
Vinyl acetate	µg/L	10	<10	-	-	-	<10
MEK (2-butanone)	µg/L	10	<10	-	-	-	<10
cis-1,2-dichloroethene	µg/L	0.5	<0.5	-	-	-	<0.5
Bromochloromethane	µg/L	0.5	<0.5	-	-	-	<0.5
Chloroform (THM)	µg/L	0.5	<0.5	-	-	-	**3.0**
2,2-dichloropropane	µg/L	0.5	<0.5	-	-	-	<0.5
1,2-dichloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
1,1,1-trichloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
1,1-dichloropropene	µg/L	0.5	<0.5	-	-	-	<0.5
Carbon tetrachloride	µg/L	0.5	<0.5	-	-	-	<0.5
Dibromomethane	µg/L	0.5	<0.5	-	-	-	<0.5
1,2-dichloropropane	µg/L	0.5	<0.5	-	-	-	<0.5
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	-	-	-	<0.5
2-nitropropane	µg/L	100	<100	-	-	-	<100
Bromodichloromethane (THM)	µg/L	0.5	<0.5	-	-	-	<0.5
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	-	-	-	<5
cis-1,3-dichloropropene	µg/L	0.5	<0.5	-	-	-	<0.5
trans-1,3-dichloropropene	µg/L	0.5	<0.5	-	-	-	<0.5
1,1,2-trichloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
1,3-dichloropropane	µg/L	0.5	<0.5	-	-	-	<0.5
Dibromochloromethane (THM)	µg/L	0.5	<0.5	-	-	-	<0.5
2-hexanone (MBK)	µg/L	5	<5	-	-	-	<5
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	-	-	-	<0.5
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	-	-	-	<0.5
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
Chlorobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
Bromoform (THM)	µg/L	0.5	<0.5	-	-	-	<0.5
cis-1,4-dichloro-2-butene	µg/L	1	<1	-	-	-	<1
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	-	-	-	<0.5
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	-	-	-	<0.5
1,2,3-trichloropropane	µg/L	0.5	<0.5	-	-	-	<0.5
trans-1,4-dichloro-2-butene	µg/L	1	<1	-	-	-	<1

VOCs in Water [AN433/AN434] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	-	-	-	<0.5
Bromobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
n-propylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
2-chlorotoluene	µg/L	0.5	<0.5	-	-	-	<0.5
4-chlorotoluene	µg/L	0.5	<0.5	-	-	-	<0.5
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
tert-butylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
sec-butylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
1,3-dichlorobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
1,4-dichlorobenzene	µg/L	0.3	<0.3	-	-	-	<0.3
p-isopropyltoluene	µg/L	0.5	<0.5	-	-	-	<0.5
1,2-dichlorobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
n-butylbenzene	µg/L	0.5	<0.5	-	-	-	<0.5
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	-	-	-	<0.5
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
Hexachlorobutadiene	µg/L	0.5	<0.5	-	-	-	<0.5
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	-	-	-	<0.5
Total VOC	µg/L	10	-	-	-	-	-

VOCs in Water [AN433/AN434] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	RINGS101215 WATER - 10/12/2015 SE147182.011	TBGS101215 WATER - 10/12/2015 SE147182.012	TRIP SPIKE WATER - 14/12/2015 SE147182.013	TRIP BLANK WATER - 14/12/2015 SE147182.014
Benzene	µg/L	0.5	<0.5	<0.5	[98%]	<0.5
Toluene	µg/L	0.5	<0.5	<0.5	[83%]	<0.5
Ethylbenzene	µg/L	0.5	<0.5	<0.5	[94%]	<0.5
m/p-xylene	µg/L	1	<1	<1	[77%]	<1
o-xylene	µg/L	0.5	<0.5	<0.5	[100%]	<0.5
Naphthalene	µg/L	0.5	<0.5	<0.5	-	<0.5
Total Xylenes	µg/L	1.5	<1.5	<1.5	-	-
Total BTEX	µg/L	3	<3	<3	-	-
Dichlorodifluoromethane (CFC-12)	µg/L	5	<5	<5	-	-
Chloromethane	µg/L	5	<5	<5	-	-
Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3	<0.3	-	-
Bromomethane	µg/L	10	<10	<10	-	-
Chloroethane	µg/L	5	<5	<5	-	-
Trichlorofluoromethane	µg/L	1	<1	<1	-	-
Acetone (2-propanone)	µg/L	10	<10	<10	-	-
Iodomethane	µg/L	5	<5	<5	-	-
1,1-dichloroethene	µg/L	0.5	<0.5	<0.5	-	-
Acrylonitrile	µg/L	0.5	<0.5	<0.5	-	-
Dichloromethane (Methylene chloride)	µg/L	4	<4	<4	-	-
Allyl chloride	µg/L	2	<2	<2	-	-
Carbon disulfide	µg/L	2	<2	<2	-	-
trans-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	-	-
MtBE (Methyl-tert-butyl ether)	µg/L	2	<2	<2	-	-
1,1-dichloroethane	µg/L	0.5	<0.5	<0.5	-	-
Vinyl acetate	µg/L	10	<10	<10	-	-
MEK (2-butanone)	µg/L	10	<10	<10	-	-
cis-1,2-dichloroethene	µg/L	0.5	<0.5	<0.5	-	-
Bromochloromethane	µg/L	0.5	<0.5	<0.5	-	-
Chloroform (THM)	µg/L	0.5	**2.5**	**3.2**	-	-
2,2-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-
1,2-dichloroethane	µg/L	0.5	<0.5	<0.5	-	-
1,1,1-trichloroethane	µg/L	0.5	<0.5	<0.5	-	-
1,1-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-
Carbon tetrachloride	µg/L	0.5	<0.5	<0.5	-	-
Dibromomethane	µg/L	0.5	<0.5	<0.5	-	-
1,2-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-
Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5	<0.5	-	-
2-nitropropane	µg/L	100	<100	<100	-	-
Bromodichloromethane (THM)	µg/L	0.5	<0.5	<0.5	-	-
MIBK (4-methyl-2-pentanone)	µg/L	5	<5	<5	-	-
cis-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-
trans-1,3-dichloropropene	µg/L	0.5	<0.5	<0.5	-	-
1,1,2-trichloroethane	µg/L	0.5	<0.5	<0.5	-	-
1,3-dichloropropane	µg/L	0.5	<0.5	<0.5	-	-
Dibromochloromethane (THM)	µg/L	0.5	<0.5	<0.5	-	-
2-hexanone (MBK)	µg/L	5	<5	<5	-	-
1,2-dibromoethane (EDB)	µg/L	0.5	<0.5	<0.5	-	-
Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5	<0.5	-	-
1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	-	-
Chlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
Bromoform (THM)	µg/L	0.5	<0.5	<0.5	-	-
cis-1,4-dichloro-2-butene	µg/L	1	<1	<1	-	-
Styrene (Vinyl benzene)	µg/L	0.5	<0.5	<0.5	-	-
1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5	<0.5	-	-
1,2,3-trichloropropane	µg/L	0.5	<0.5	<0.5	-	-
trans-1,4-dichloro-2-butene	µg/L	1	<1	<1	-	-

VOCs in Water [AN433/AN434] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	RINGS101215 WATER - 10/12/2015 SE147182.011	TBGS101215 WATER - 10/12/2015 SE147182.012	TRIP SPIKE WATER - 14/12/2015 SE147182.013	TRIP BLANK WATER - 14/12/2015 SE147182.014
Isopropylbenzene (Cumene)	µg/L	0.5	<0.5	<0.5	-	-
Bromobenzene	µg/L	0.5	<0.5	<0.5	-	-
n-propylbenzene	µg/L	0.5	<0.5	<0.5	-	-
2-chlorotoluene	µg/L	0.5	<0.5	<0.5	-	-
4-chlorotoluene	µg/L	0.5	<0.5	<0.5	-	-
1,3,5-trimethylbenzene	µg/L	0.5	<0.5	<0.5	-	-
tert-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-
1,2,4-trimethylbenzene	µg/L	0.5	<0.5	<0.5	-	-
sec-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-
1,3-dichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
1,4-dichlorobenzene	µg/L	0.3	<0.3	<0.3	-	-
p-isopropyltoluene	µg/L	0.5	<0.5	<0.5	-	-
1,2-dichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
n-butylbenzene	µg/L	0.5	<0.5	<0.5	-	-
1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5	<0.5	-	-
1,2,4-trichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
Hexachlorobutadiene	µg/L	0.5	<0.5	<0.5	-	-
1,2,3-trichlorobenzene	µg/L	0.5	<0.5	<0.5	-	-
Total VOC	µg/L	10	-	-	-	-

Volatile Petroleum Hydrocarbons in Water [AN433/AN434/AN410] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
TRH C6-C9	µg/L	40	<40	<40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50	<50	<50

PARAMETER	UOM	LOR	RINGS101215 WATER - 10/12/2015 SE147182.011	TBGS101215 WATER - 10/12/2015 SE147182.012	TRIP BLANK WATER - 14/12/2015 SE147182.014
TRH C6-C9	µg/L	40	<40	<40	<40
Benzene (F0)	µg/L	0.5	<0.5	<0.5	<0.5
TRH C6-C10	µg/L	50	<50	<50	<50
TRH C6-C10 minus BTEX (F1)	µg/L	50	<50	<50	<50

TRH (Total Recoverable Hydrocarbons) in Water [AN403] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
TRH C10-C14	µg/L	50	<50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	<200	<200	**210**	**410**	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16 (F2)	µg/L	60	<60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	**590**	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C36	µg/L	450	<450	<450	<450	<450	<450
TRH C10-C40	µg/L	650	<650	<650	<650	<650	<650

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
TRH C10-C14	µg/L	50	<50	<50	<50	<50	<50
TRH C15-C28	µg/L	200	**330**	<200	<200	<200	<200
TRH C29-C36	µg/L	200	<200	<200	<200	<200	<200
TRH C37-C40	µg/L	200	<200	<200	<200	<200	<200
TRH >C10-C16 (F2)	µg/L	60	<60	<60	<60	<60	<60
TRH >C16-C34 (F3)	µg/L	500	<500	<500	<500	<500	<500
TRH >C34-C40 (F4)	µg/L	500	<500	<500	<500	<500	<500
TRH C10-C36	µg/L	450	<450	<450	<450	<450	<450
TRH C10-C40	µg/L	650	<650	<650	<650	<650	<650

PARAMETER	UOM	LOR	RINGS101215 WATER - 10/12/2015 SE147182.011
TRH C10-C14	µg/L	50	<50
TRH C15-C28	µg/L	200	<200
TRH C29-C36	µg/L	200	<200
TRH C37-C40	µg/L	200	<200
TRH >C10-C16 (F2)	µg/L	60	<60
TRH >C16-C34 (F3)	µg/L	500	<500
TRH >C34-C40 (F4)	µg/L	500	<500
TRH C10-C36	µg/L	450	<450
TRH C10-C40	µg/L	650	<650

Low Level PAH (Poly Aromatic Hydrocarbons) in Water [AN420] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Naphthalene	µg/L	0.02	0.03	<0.02	<0.02	0.04	<0.02
2-methylnaphthalene	µg/L	0.01	0.01	0.03	0.04	0.03	<0.01
1-methylnaphthalene	µg/L	0.01	<0.01	0.03	0.03	0.02	<0.01
Acenaphthylene	µg/L	0.01	0.02	<0.01	<0.01	0.03	<0.01
Acenaphthene	µg/L	0.01	0.10	<0.01	<0.01	0.12	<0.01
Fluorene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	µg/L	0.01	0.30	0.03	0.03	0.47	0.02
Anthracene	µg/L	0.01	0.09	<0.01	<0.01	0.13	<0.01
Fluoranthene	µg/L	0.01	0.56	0.02	<0.01	0.70	<0.01
Pyrene	µg/L	0.01	0.50	0.03	<0.01	0.67	<0.01
Benzo(a)anthracene	µg/L	0.01	0.17	0.01	<0.01	0.09	<0.01
Chrysene	µg/L	0.01	0.19	0.02	<0.01	0.30	<0.01
Benzo(b&j&k)fluoranthene	µg/L	0.02	0.18	<0.04↑	<0.02	0.33	<0.02
Benzo(a)pyrene	µg/L	0.01	0.14	<0.02↑	<0.01	0.24	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.01	0.09	<0.01	<0.01	0.15	<0.01
Dibenzo(a&h)anthracene	µg/L	0.01	0.02	<0.01	<0.01	0.02	<0.01
Benzo(ghi)perylene	µg/L	0.01	0.08	<0.02↑	<0.01	0.13	<0.01
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ	0.012	0.20	<0.012	<0.012	0.33	<0.012
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	2.5	0.1	<0.1	3.4	<0.1

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Naphthalene	µg/L	0.02	0.14	<0.02	<0.02	<0.02	<0.02
2-methylnaphthalene	µg/L	0.01	0.05	<0.01	0.11	<0.01	<0.01
1-methylnaphthalene	µg/L	0.01	0.06	<0.01	<0.01	<0.01	<0.01
Acenaphthylene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Acenaphthene	µg/L	0.01	0.12	<0.01	<0.01	<0.01	<0.01
Fluorene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Phenanthrene	µg/L	0.01	0.32	<0.01	<0.01	<0.01	<0.01
Anthracene	µg/L	0.01	0.03	<0.01	<0.01	<0.01	<0.01
Fluoranthene	µg/L	0.01	0.07	<0.01	<0.01	<0.01	<0.01
Pyrene	µg/L	0.01	0.06	<0.01	<0.01	<0.01	<0.01
Benzo(a)anthracene	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01
Chrysene	µg/L	0.01	0.02	<0.01	<0.01	<0.01	<0.01
Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Benzo(a)pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Dibenzo(a&h)anthracene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Benzo(ghi)perylene	µg/L	0.01	<0.01	<0.01	<0.01	<0.01	<0.01
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ	0.012	<0.012	<0.012	<0.012	<0.012	<0.012
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	0.8	<0.1	<0.1	<0.1	<0.1

Low Level PAH (Poly Aromatic Hydrocarbons) in Water [AN420] Tested: 17/12/2015 (continued)

PARAMETER	UOM	LOR	RINGS101215 WATER - 10/12/2015 SE147182.011
Naphthalene	µg/L	0.02	<0.02
2-methylnaphthalene	µg/L	0.01	<0.01
1-methylnaphthalene	µg/L	0.01	<0.01
Acenaphthylene	µg/L	0.01	<0.01
Acenaphthene	µg/L	0.01	<0.01
Fluorene	µg/L	0.01	<0.01
Phenanthrene	µg/L	0.01	<0.01
Anthracene	µg/L	0.01	<0.01
Fluoranthene	µg/L	0.01	<0.01
Pyrene	µg/L	0.01	<0.01
Benzo(a)anthracene	µg/L	0.01	<0.01
Chrysene	µg/L	0.01	<0.01
Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02
Benzo(a)pyrene	µg/L	0.01	<0.01
Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01
Dibenzo(a&h)anthracene	µg/L	0.01	<0.01
Benzo(ghi)perylene	µg/L	0.01	<0.01
Carcinogenic PAHs (as BaP TEQ) - assume non detects	TEQ	0.012	<0.012
Total PAH VIC EPA Guidelines (16)*	µg/L	0.1	<0.1

Trace Metals (Total) in Water by ICPMS [AN022/AN318] Tested: 16/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Total Arsenic	µg/L	1	7	13	8	7	<1
Total Cadmium	µg/L	0.1	1.0	2.2	0.4	1.0	<0.1
Total Chromium	µg/L	1	8	9	11	10	2
Total Copper	µg/L	1	50	27	33	50	<1
Total Lead	µg/L	1	31	45	32	33	1
Total Nickel	µg/L	1	88	150	96	87	2
Total Zinc	µg/L	5	650	870	200	500	30

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Total Arsenic	µg/L	1	12	3	<1	3	<1
Total Cadmium	µg/L	0.1	0.2	0.1	<0.1	0.1	<0.1
Total Chromium	µg/L	1	8	2	3	1	<1
Total Copper	µg/L	1	17	2	1	5	<1
Total Lead	µg/L	1	18	13	2	7	<1
Total Nickel	µg/L	1	33	43	2	45	<1
Total Zinc	µg/L	5	130	99	15	97	<5

Mercury (total) in Water [AN311/AN312] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Total Mercury	mg/L	0.00005	0.00005	0.00009	<0.00005	0.00007	<0.00005

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Total Mercury	mg/L	0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 16/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Arsenic, As	µg/L	1	4	7	5	4	<1
Cadmium, Cd	µg/L	0.1	0.8	2.1	0.4	0.9	<0.1
Chromium, Cr	µg/L	1	1	<1	6	<1	<1
Copper, Cu	µg/L	1	42	17	27	38	<1
Lead, Pb	µg/L	1	19	33	22	18	<1
Nickel, Ni	µg/L	1	81	140	110	79	<1
Zinc, Zn	µg/L	5	500	780	270	490	28

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Arsenic, As	µg/L	1	5	3	<1	3	<1
Cadmium, Cd	µg/L	0.1	0.1	0.1	<0.1	<0.1	<0.1
Chromium, Cr	µg/L	1	<1	<1	<1	<1	<1
Copper, Cu	µg/L	1	<1	3	<1	5	<1
Lead, Pb	µg/L	1	1	11	<1	7	<1
Nickel, Ni	µg/L	1	31	42	2	41	<1
Zinc, Zn	µg/L	5	130	99	11	56	<5

Mercury (dissolved) in Water [AN311/AN312] Tested: 17/12/2015

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 9/12/2015 SE147182.001	T_5_ESMW06 WATER - 9/12/2015 SE147182.002	T_ESMW10 WATER - 9/12/2015 SE147182.003	DUPGS091215 WATER - 9/12/2015 SE147182.004	T_1_ESMW01 WATER - 10/12/2015 SE147182.005
Mercury	mg/L	0.00005	<0.0001↑	<0.0001↑	<0.0001↑	<0.0001↑	<0.0001↑

PARAMETER	UOM	LOR	T_5_ESMW04 WATER - 10/12/2015 SE147182.006	T_ESMW07 WATER - 10/12/2015 SE147182.007	T_ESMW08 WATER - 10/12/2015 SE147182.008	T_ESMW09 WATER - 10/12/2015 SE147182.009	FBGS101215 WATER - 10/12/2015 SE147182.010
Mercury	mg/L	0.00005	<0.0001↑	<0.0001↑	<0.0001↑	<0.0001↑	<0.0001↑

Sample Subcontracted [] Tested: -

PARAMETER	UOM	LOR	T_5_ESMW05 WATER - 15/12/2015 SE147182.015	T_ESMW10 WATER - 15/12/2015 SE147182.016	T_1_ESMW01 WATER - 15/12/2015 SE147182.017	T_ESMW08 WATER - 15/12/2015 SE147182.018	T_ESMW09 WATER - 15/12/2015 SE147182.019
Sample Subcontracted*	No unit	-	Subcontracted	Subcontracted	Subcontracted	Subcontracted	Subcontracted

PARAMETER	UOM	LOR	DUPGS151215 WATER - 15/12/2015 SE147182.020
Sample Subcontracted*	No unit	-	Subcontracted

METHOD	METHODOLOGY SUMMARY
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN022/AN318	Following acid digestion of un filtered sample, determination of elements at trace level in waters by ICP -MS technique, in accordance with USEPA 6020A.
AN022	The water sample is digested with Nitric Acid and made up to the original volume similar to APHA3030E.
AN311/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.
AN318	Determination of elements at trace level in waters by ICP-MS technique, in accordance with USEPA 6020A.
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 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is not corrected for Naphthalene.
AN403	Additionally, the volatile C6-C9/C6-C10 fractions 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 differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken. This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup /fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	PAH Compounds: The determination the concentration of polynuclear aromatic hydrocarbons (PAH) in solid waste matrices, soils and waters by Gas Chromatography with Mass Spectrometric Detection (Based on USEPA 3500C and 8270D).
AN420	Carcinogenic PAHs may be expressed as Benzo(a)pyrene equivalents by applying the BaP toxicity equivalence factor (NEPM 1999, June 2013, B7). These can be reported as the individual PAHs and as a sum of carcinogenic PAHs. The sum is reported three ways, the first assuming all <LOR results are zero, the second assuming all < LOR results are half the LOR and the third assuming all <LOR results are the LOR.
AN433/AN434/AN410	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN433/AN434	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC`s are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
		NVL	Not validated.	LOR	Limit of Reporting.
**	Indicative data, theoretical holding time exceeded.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Samples analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calcuated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be 1.6 / 2 (0.8 mg/kg). Where only 2 analytes are being summed, the " Total" LOR will be the sum of those two LORs.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

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STATEMENT OF QA/QC PERFORMANCE

SE147182 R0

CLIENT DETAILS

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Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
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Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	20

LABORATORY DETAILS

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Email	au.environmental.sydney@sgs.com
SGS Reference	**SE147182 R0**
Date Received	16 Dec 2015
Date Reported	21 Dec 2015

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS Environmental Services' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document and was supplied by the Client.
This QA/QC Statement must be read in conjunction with the referenced Analytical Report.
The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Extraction Date	Low Level PAH (Poly Aromatic Hydrocarbons) in Water	4 items
	TRH (Total Recoverable Hydrocarbons) in Water	4 items
	VOCs in Water	4 items
	Volatile Petroleum Hydrocarbons in Water	4 items
Matrix Spike	Trace Metals (Total) in Water by ICPMS	1 item

SAMPLE SUMMARY

Sample counts by matrix	20 Waters	Type of documentation received	COC
Date documentation received	16/12/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	5.6°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

HOLDING TIME SUMMARY

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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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
RINGS101215	SE147182.011	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091974	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091974	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091974	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091974	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091974	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015

Mercury (total) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091973	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091973	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091973	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091973	09 Dec 2015	16 Dec 2015	06 Jan 2016	17 Dec 2015	06 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091973	10 Dec 2015	16 Dec 2015	07 Jan 2016	17 Dec 2015	07 Jan 2016	18 Dec 2015

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091934	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091934	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091934	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091934	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091934	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015

Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091933	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091933	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091933	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091933	09 Dec 2015	16 Dec 2015	06 Jun 2016	16 Dec 2015	06 Jun 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015

HOLDING TIME SUMMARY

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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.

Trace Metals (Total) in Water by ICPMS (continued)

Method: ME-(AU)-[ENV]AN022/AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
FBGS101215	SE147182.010	LB091933	10 Dec 2015	16 Dec 2015	07 Jun 2016	16 Dec 2015	07 Jun 2016	18 Dec 2015

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091969	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
RINGS101215	SE147182.011	LB091969	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015

VOCs in Water

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
RINGS101215	SE147182.011	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TBGS101215	SE147182.012	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TRIP SPIKE	SE147182.013	LB091975	14 Dec 2015	16 Dec 2015	21 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TRIP BLANK	SE147182.014	LB091975	14 Dec 2015	16 Dec 2015	21 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
T_5_ESMW05	SE147182.001	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_5_ESMW06	SE147182.002	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_ESMW10	SE147182.003	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
DUPGS091215	SE147182.004	LB091975	09 Dec 2015	16 Dec 2015	16 Dec 2015	17 Dec 2015†	26 Jan 2016	18 Dec 2015
T_1_ESMW01	SE147182.005	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_5_ESMW04	SE147182.006	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW07	SE147182.007	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW08	SE147182.008	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
T_ESMW09	SE147182.009	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
FBGS101215	SE147182.010	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
RINGS101215	SE147182.011	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TBGS101215	SE147182.012	LB091975	10 Dec 2015	16 Dec 2015	17 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TRIP SPIKE	SE147182.013	LB091975	14 Dec 2015	16 Dec 2015	21 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015
TRIP BLANK	SE147182.014	LB091975	14 Dec 2015	16 Dec 2015	21 Dec 2015	17 Dec 2015	26 Jan 2016	18 Dec 2015

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	NA
	T_5_ESMW06	SE147182.002	%	40 - 130%	NA
	T_ESMW10	SE147182.003	%	40 - 130%	NA
	DUPGS091215	SE147182.004	%	40 - 130%	NA
	T_1_ESMW01	SE147182.005	%	40 - 130%	NA
	T_5_ESMW04	SE147182.006	%	40 - 130%	NA
	T_ESMW07	SE147182.007	%	40 - 130%	NA
	T_ESMW08	SE147182.008	%	40 - 130%	NA
	T_ESMW09	SE147182.009	%	40 - 130%	NA
	FBGS101215	SE147182.010	%	40 - 130%	NA
	RINGS101215	SE147182.011	%	40 - 130%	NA
d14-p-terphenyl (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	76
	T_5_ESMW06	SE147182.002	%	40 - 130%	72
	T_ESMW10	SE147182.003	%	40 - 130%	56
	DUPGS091215	SE147182.004	%	40 - 130%	73
	T_1_ESMW01	SE147182.005	%	40 - 130%	80
	T_5_ESMW04	SE147182.006	%	40 - 130%	65
	T_ESMW07	SE147182.007	%	40 - 130%	74
	T_ESMW08	SE147182.008	%	40 - 130%	63
	T_ESMW09	SE147182.009	%	40 - 130%	57
	FBGS101215	SE147182.010	%	40 - 130%	77
	RINGS101215	SE147182.011	%	40 - 130%	73
d5-nitrobenzene (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	NA
	T_5_ESMW06	SE147182.002	%	40 - 130%	NA
	T_ESMW10	SE147182.003	%	40 - 130%	NA
	DUPGS091215	SE147182.004	%	40 - 130%	NA
	T_1_ESMW01	SE147182.005	%	40 - 130%	NA
	T_5_ESMW04	SE147182.006	%	40 - 130%	NA
	T_ESMW07	SE147182.007	%	40 - 130%	NA
	T_ESMW08	SE147182.008	%	40 - 130%	NA
	T_ESMW09	SE147182.009	%	40 - 130%	NA
	FBGS101215	SE147182.010	%	40 - 130%	NA
	RINGS101215	SE147182.011	%	40 - 130%	NA

VOCs in Water

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	112
	T_5_ESMW06	SE147182.002	%	40 - 130%	83
	T_ESMW10	SE147182.003	%	40 - 130%	121
	DUPGS091215	SE147182.004	%	40 - 130%	119
	T_1_ESMW01	SE147182.005	%	40 - 130%	100
	T_5_ESMW04	SE147182.006	%	40 - 130%	107
	T_ESMW07	SE147182.007	%	40 - 130%	102
	T_ESMW08	SE147182.008	%	40 - 130%	103
	T_ESMW09	SE147182.009	%	40 - 130%	124
	FBGS101215	SE147182.010	%	40 - 130%	124
	RINGS101215	SE147182.011	%	40 - 130%	97
	TBGS101215	SE147182.012	%	40 - 130%	80
	TRIP SPIKE	SE147182.013	%	40 - 130%	112
	TRIP BLANK	SE147182.014	%	40 - 130%	123
d4-1,2-dichloroethane (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	73
	T_5_ESMW06	SE147182.002	%	40 - 130%	117
	T_ESMW10	SE147182.003	%	40 - 130%	85
	DUPGS091215	SE147182.004	%	40 - 130%	94
	T_1_ESMW01	SE147182.005	%	40 - 130%	102
	T_5_ESMW04	SE147182.006	%	40 - 130%	120
	T_ESMW07	SE147182.007	%	40 - 130%	102
	T_ESMW08	SE147182.008	%	40 - 130%	76
	T_ESMW09	SE147182.009	%	40 - 130%	78
	FBGS101215	SE147182.010	%	40 - 130%	114
	RINGS101215	SE147182.011	%	40 - 130%	85

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

VOCs in Water (continued)

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

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d4-1,2-dichloroethane (Surrogate)	TBGS101215	SE147182.012	%	40 - 130%	118
	TRIP SPIKE	SE147182.013	%	40 - 130%	108
	TRIP BLANK	SE147182.014	%	40 - 130%	80
d8-toluene (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	71
	T_5_ESMW06	SE147182.002	%	40 - 130%	73
	T_ESMW10	SE147182.003	%	40 - 130%	88
	DUPGS091215	SE147182.004	%	40 - 130%	72
	T_1_ESMW01	SE147182.005	%	40 - 130%	85
	T_5_ESMW04	SE147182.006	%	40 - 130%	85
	T_ESMW07	SE147182.007	%	40 - 130%	92
	T_ESMW08	SE147182.008	%	40 - 130%	81
	T_ESMW09	SE147182.009	%	40 - 130%	77
	FBGS101215	SE147182.010	%	40 - 130%	96
	RINGS101215	SE147182.011	%	40 - 130%	76
	TBGS101215	SE147182.012	%	40 - 130%	99
	TRIP SPIKE	SE147182.013	%	40 - 130%	96
	TRIP BLANK	SE147182.014	%	40 - 130%	96
Dibromofluoromethane (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	90
	T_5_ESMW06	SE147182.002	%	40 - 130%	126
	T_ESMW10	SE147182.003	%	40 - 130%	105
	DUPGS091215	SE147182.004	%	40 - 130%	97
	T_1_ESMW01	SE147182.005	%	40 - 130%	88
	T_5_ESMW04	SE147182.006	%	40 - 130%	121
	T_ESMW07	SE147182.007	%	40 - 130%	112
	T_ESMW08	SE147182.008	%	40 - 130%	94
	T_ESMW09	SE147182.009	%	40 - 130%	84
	FBGS101215	SE147182.010	%	40 - 130%	123
	RINGS101215	SE147182.011	%	40 - 130%	108
	TBGS101215	SE147182.012	%	40 - 130%	114
	TRIP SPIKE	SE147182.013	%	40 - 130%	107
	TRIP BLANK	SE147182.014	%	40 - 130%	116

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	112
	T_5_ESMW06	SE147182.002	%	40 - 130%	107
	T_ESMW10	SE147182.003	%	40 - 130%	121
	DUPGS091215	SE147182.004	%	40 - 130%	119
	T_1_ESMW01	SE147182.005	%	40 - 130%	100
	T_5_ESMW04	SE147182.006	%	40 - 130%	127
	T_ESMW07	SE147182.007	%	40 - 130%	102
	T_ESMW08	SE147182.008	%	40 - 130%	103
	T_ESMW09	SE147182.009	%	40 - 130%	124
	FBGS101215	SE147182.010	%	40 - 130%	105
	RINGS101215	SE147182.011	%	40 - 130%	99
	TBGS101215	SE147182.012	%	40 - 130%	127
	TRIP BLANK	SE147182.014	%	40 - 130%	123
d4-1,2-dichloroethane (Surrogate)	T_5_ESMW05	SE147182.001	%	60 - 130%	73
	T_5_ESMW06	SE147182.002	%	60 - 130%	110
	T_ESMW10	SE147182.003	%	60 - 130%	85
	DUPGS091215	SE147182.004	%	60 - 130%	94
	T_1_ESMW01	SE147182.005	%	60 - 130%	102
	T_5_ESMW04	SE147182.006	%	60 - 130%	120
	T_ESMW07	SE147182.007	%	60 - 130%	102
	T_ESMW08	SE147182.008	%	60 - 130%	76
	T_ESMW09	SE147182.009	%	60 - 130%	78
	FBGS101215	SE147182.010	%	60 - 130%	107
	RINGS101215	SE147182.011	%	60 - 130%	82
	TBGS101215	SE147182.012	%	60 - 130%	111
	TRIP BLANK	SE147182.014	%	60 - 130%	80
d8-toluene (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	71

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Volatile Petroleum Hydrocarbons in Water (continued)

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
d8-toluene (Surrogate)	T_5_ESMW06	SE147182.002	%	40 - 130%	79
	T_ESMW10	SE147182.003	%	40 - 130%	88
	DUPGS091215	SE147182.004	%	40 - 130%	72
	T_1_ESMW01	SE147182.005	%	40 - 130%	85
	T_5_ESMW04	SE147182.006	%	40 - 130%	92
	T_ESMW07	SE147182.007	%	40 - 130%	92
	T_ESMW08	SE147182.008	%	40 - 130%	81
	T_ESMW09	SE147182.009	%	40 - 130%	77
	FBGS101215	SE147182.010	%	40 - 130%	95
	RINGS101215	SE147182.011	%	40 - 130%	91
	TBGS101215	SE147182.012	%	40 - 130%	79
	TRIP BLANK	SE147182.014	%	40 - 130%	96
Dibromofluoromethane (Surrogate)	T_5_ESMW05	SE147182.001	%	40 - 130%	90
	T_5_ESMW06	SE147182.002	%	40 - 130%	120
	T_ESMW10	SE147182.003	%	40 - 130%	105
	DUPGS091215	SE147182.004	%	40 - 130%	97
	T_1_ESMW01	SE147182.005	%	40 - 130%	88
	T_5_ESMW04	SE147182.006	%	40 - 130%	110
	T_ESMW07	SE147182.007	%	40 - 130%	112
	T_ESMW08	SE147182.008	%	40 - 130%	94
	T_ESMW09	SE147182.009	%	40 - 130%	84
	FBGS101215	SE147182.010	%	40 - 130%	117
	RINGS101215	SE147182.011	%	40 - 130%	103
	TBGS101215	SE147182.012	%	40 - 130%	110
	TRIP BLANK	SE147182.014	%	40 - 130%	116

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number		Parameter	Units	LOR	Result
LB091969.001		Naphthalene	µg/L	0.02	<0.02
		2-methylnaphthalene	µg/L	0.01	<0.01
		1-methylnaphthalene	µg/L	0.01	<0.01
		Acenaphthylene	µg/L	0.01	<0.01
		Acenaphthene	µg/L	0.01	<0.01
		Fluorene	µg/L	0.01	<0.01
		Phenanthrene	µg/L	0.01	<0.01
		Anthracene	µg/L	0.01	<0.01
		Fluoranthene	µg/L	0.01	<0.01
		Pyrene	µg/L	0.01	<0.01
		Benzo(a)anthracene	µg/L	0.01	<0.01
		Chrysene	µg/L	0.01	<0.01
		Benzo(b&j&k)fluoranthene	µg/L	0.02	<0.02
		Benzo(a)pyrene	µg/L	0.01	<0.01
		Indeno(1,2,3-cd)pyrene	µg/L	0.01	<0.01
		Dibenzo(a&h)anthracene	µg/L	0.01	<0.01
		Benzo(ghi)perylene	µg/L	0.01	<0.01
	Surrogates	d14-p-terphenyl (Surrogate)	%	-	76

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311/AN312

Sample Number	Parameter	Units	LOR	Result
LB091974.001	Mercury	mg/L	0.00005	<0.0001

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB091934.001	Arsenic, As	µg/L	1	<1
	Cadmium, Cd	µg/L	0.1	<0.1
	Chromium, Cr	µg/L	1	<1
	Copper, Cu	µg/L	1	<1
	Lead, Pb	µg/L	1	<1
	Nickel, Ni	µg/L	1	<1
	Zinc, Zn	µg/L	5	<5

Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Number	Parameter	Units	LOR	Result
LB091933.001	Total Arsenic	µg/L	1	<1
	Total Cadmium	µg/L	0.1	<0.1
	Total Chromium	µg/L	1	<1
	Total Copper	µg/L	1	<1
	Total Lead	µg/L	1	<1
	Total Nickel	µg/L	1	<1
	Total Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB091969.001	TRH C10-C14	µg/L	50	<50
	TRH C15-C28	µg/L	200	<200
	TRH C29-C36	µg/L	200	<200
	TRH C37-C40	µg/L	200	<200

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result
LB091975.001	Fumigants	2,2-dichloropropane	µg/L	0.5	<0.5
		1,2-dichloropropane	µg/L	0.5	<0.5
		cis-1,3-dichloropropene	µg/L	0.5	<0.5
		trans-1,3-dichloropropene	µg/L	0.5	<0.5
		1,2-dibromoethane (EDB)	µg/L	0.5	<0.5
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	<5
		Chloromethane	µg/L	5	<5
		Vinyl chloride (Chloroethene)	µg/L	0.3	<0.3
		Bromomethane	µg/L	10	<10

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB091975.001	Halogenated Aliphatics	Chloroethane	µg/L	5	<5
		Trichlorofluoromethane	µg/L	1	<1
		Iodomethane	µg/L	5	<5
		1,1-dichloroethene	µg/L	0.5	<0.5
		Dichloromethane (Methylene chloride)	µg/L	4	<4
		Allyl chloride	µg/L	2	<2
		trans-1,2-dichloroethene	µg/L	0.5	<0.5
		1,1-dichloroethane	µg/L	0.5	<0.5
		cis-1,2-dichloroethene	µg/L	0.5	<0.5
		Bromochloromethane	µg/L	0.5	<0.5
		1,2-dichloroethane	µg/L	0.5	<0.5
		1,1,1-trichloroethane	µg/L	0.5	<0.5
		1,1-dichloropropene	µg/L	0.5	<0.5
		Carbon tetrachloride	µg/L	0.5	<0.5
		Dibromomethane	µg/L	0.5	<0.5
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	<0.5
		1,1,2-trichloroethane	µg/L	0.5	<0.5
		1,3-dichloropropane	µg/L	0.5	<0.5
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	<0.5
		1,1,1,2-tetrachloroethane	µg/L	0.5	<0.5
		cis-1,4-dichloro-2-butene	µg/L	1	<1
		1,1,2,2-tetrachloroethane	µg/L	0.5	<0.5
		1,2,3-trichloropropane	µg/L	0.5	<0.5
		trans-1,4-dichloro-2-butene	µg/L	1	<1
		1,2-dibromo-3-chloropropane	µg/L	0.5	<0.5
		Hexachlorobutadiene	µg/L	0.5	<0.5
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	<0.5
		Bromobenzene	µg/L	0.5	<0.5
		2-chlorotoluene	µg/L	0.5	<0.5
		4-chlorotoluene	µg/L	0.5	<0.5
		1,3-dichlorobenzene	µg/L	0.5	<0.5
		1,4-dichlorobenzene	µg/L	0.3	<0.3
		1,2-dichlorobenzene	µg/L	0.5	<0.5
		1,2,4-trichlorobenzene	µg/L	0.5	<0.5
		1,2,3-trichlorobenzene	µg/L	0.5	<0.5
	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	µg/L	1	<1
		o-xylene	µg/L	0.5	<0.5
		Styrene (Vinyl benzene)	µg/L	0.5	<0.5
		Isopropylbenzene (Cumene)	µg/L	0.5	<0.5
		n-propylbenzene	µg/L	0.5	<0.5
		1,3,5-trimethylbenzene	µg/L	0.5	<0.5
		tert-butylbenzene	µg/L	0.5	<0.5
		1,2,4-trimethylbenzene	µg/L	0.5	<0.5
		sec-butylbenzene	µg/L	0.5	<0.5
		p-isopropyltoluene	µg/L	0.5	<0.5
		n-butylbenzene	µg/L	0.5	<0.5
	Nitrogenous Compounds	Acrylonitrile	µg/L	0.5	<0.5
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	<10
		MtBE (Methyl-tert-butyl ether)	µg/L	2	<2
		Vinyl acetate	µg/L	10	<10
		MEK (2-butanone)	µg/L	10	<10
		MIBK (4-methyl-2-pentanone)	µg/L	5	<5
		2-hexanone (MBK)	µg/L	5	<5
	Polycyclic VOCs	Naphthalene	µg/L	0.5	<0.5
	Sulphonated	Carbon disulfide	µg/L	2	<2
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	120
		d4-1,2-dichloroethane (Surrogate)	%	-	123
		d8-toluene (Surrogate)	%	-	91

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result
LB091975.001	Surrogates	Bromofluorobenzene (Surrogate)	%	-	112
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	<0.5
		Bromodichloromethane (THM)	µg/L	0.5	<0.5
		Dibromochloromethane (THM)	µg/L	0.5	<0.5
		Bromoform (THM)	µg/L	0.5	<0.5

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result
LB091975.001		TRH C6-C9	µg/L	40	<40
	Surrogates	Dibromofluoromethane (Surrogate)	%	-	118
		d4-1,2-dichloroethane (Surrogate)	%	-	116
		d8-toluene (Surrogate)	%	-	93
		Bromofluorobenzene (Surrogate)	%	-	100

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 reason identifer when outside suggested criteria. Refer to the footnotes section at the end of this report for failure reasons.

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE147182.010	LB091934.014	Arsenic, As	µg/L	1	<1	<1	200	0
		Cadmium, Cd	µg/L	0.1	<0.1	<0.1	200	0
		Chromium, Cr	µg/L	1	<1	<1	200	0
		Copper, Cu	µg/L	1	<1	<1	200	0
		Lead, Pb	µg/L	1	<1	<1	200	0
		Nickel, Ni	µg/L	1	<1	<1	200	0
		Zinc, Zn	µg/L	5	<5	<5	130	0

Trace Metals (Total) in Water by ICPMS — Method: ME-(AU)-[ENV]AN022/AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE147182.010	LB091933.014	Total Arsenic	µg/L	1	<1	<1	200	0
		Total Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Total Chromium	µg/L	1	<1	<1	200	0
		Total Copper	µg/L	1	<1	<1	200	0
		Total Lead	µg/L	1	<1	<1	200	0
		Total Nickel	µg/L	1	<1	<1	200	0
		Total Zinc	µg/L	5	<5	<5	140	0

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.

Low Level PAH (Poly Aromatic Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091969.002	Naphthalene	µg/L	0.02	NA	40	60 - 140	71
	2-methylnaphthalene	µg/L	0.01	NA	40	60 - 140	75
	1-methylnaphthalene	µg/L	0.01	NA	40	60 - 140	75
	Acenaphthylene	µg/L	0.01	NA	40	60 - 140	82
	Acenaphthene	µg/L	0.01	NA	40	60 - 140	70
	Fluorene	µg/L	0.01	NA	40	60 - 140	73
	Phenanthrene	µg/L	0.01	NA	40	60 - 140	79
	Anthracene	µg/L	0.01	NA	40	60 - 140	71
	Fluoranthene	µg/L	0.01	NA	40	60 - 140	67
	Pyrene	µg/L	0.01	NA	40	60 - 140	73
	Benzo(a)anthracene	µg/L	0.01	NA	40	60 - 140	70
	Chrysene	µg/L	0.01	NA	40	60 - 140	94
	Benzo(b&j&k)fluoranthene	µg/L	0.02	NA	80	60 - 140	87
	Benzo(a)pyrene	µg/L	0.01	NA	40	60 - 140	66
	Indeno(1,2,3-cd)pyrene	µg/L	0.01	NA	40	60 - 140	80
	Dibenzo(a&h)anthracene	µg/L	0.01	NA	40	60 - 140	78
	Benzo(ghi)perylene	µg/L	0.01	NA	40	60 - 140	75

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091934.002	Arsenic, As	µg/L	1	20	20	80 - 120	100
	Cadmium, Cd	µg/L	0.1	20	20	80 - 120	102
	Chromium, Cr	µg/L	1	21	20	80 - 120	103
	Copper, Cu	µg/L	1	21	20	80 - 120	104
	Lead, Pb	µg/L	1	21	20	80 - 120	107
	Nickel, Ni	µg/L	1	21	20	80 - 120	104
	Zinc, Zn	µg/L	5	22	20	80 - 120	111

Trace Metals (Total) in Water by ICPMS

Method: ME-(AU)-[ENV]AN022/AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091933.002	Total Arsenic	µg/L	1	20	20	80 - 120	102
	Total Cadmium	µg/L	0.1	20	20	80 - 120	99
	Total Chromium	µg/L	1	21	20	80 - 120	103
	Total Copper	µg/L	1	20	20	80 - 120	102
	Total Lead	µg/L	1	20	20	80 - 120	101
	Total Nickel	µg/L	1	20	20	80 - 120	102
	Total Zinc	µg/L	5	21	20	80 - 120	103

TRH (Total Recoverable Hydrocarbons) in Water

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091969.002		TRH C10-C14	µg/L	50	1000	1200	60 - 140	85
		TRH C15-C28	µg/L	200	1200	1200	60 - 140	103
		TRH C29-C36	µg/L	200	1500	1200	60 - 140	124
	TRH F Bands	TRH >C10-C16 (F2)	µg/L	60	1100	1200	60 - 140	94
		TRH >C16-C34 (F3)	µg/L	500	1400	1200	60 - 140	117
		TRH >C34-C40 (F4)	µg/L	500	730	600	60 - 140	122

VOCs in Water

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091975.002	Fumigants	2,2-dichloropropane	µg/L	0.5	NA	10	60 - 140	116
		1,2-dichloropropane	µg/L	0.5	NA	10	60 - 140	105
		cis-1,3-dichloropropene	µg/L	0.5	NA	10	60 - 140	103
		trans-1,3-dichloropropene	µg/L	0.5	NA	10	60 - 140	88
		1,2-dibromoethane (EDB)	µg/L	0.5	NA	10	60 - 140	121
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	µg/L	5	NA	10	60 - 140	90
		Chloromethane	µg/L	5	NA	10	60 - 140	102
		Vinyl chloride (Chloroethene)	µg/L	0.3	NA	10	60 - 140	125
		Bromomethane	µg/L	10	NA	10	60 - 140	100
		Chloroethane	µg/L	5	NA	10	60 - 140	81
		Trichlorofluoromethane	µg/L	1	NA	10	60 - 140	93
		Iodomethane	µg/L	5	NA	10	60 - 140	77
		1,1-dichloroethene	µg/L	0.5	NA	10	60 - 140	86
		Dichloromethane (Methylene chloride)	µg/L	4	NA	10	60 - 140	128

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.

VOCs in Water (continued)

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

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091975.002	Halogenated Aliphatics	Allyl chloride	µg/L	2	NA	10	60 - 140	86
		trans-1,2-dichloroethene	µg/L	0.5	NA	10	60 - 140	104
		1,1-dichloroethane	µg/L	0.5	NA	10	60 - 140	116
		cis-1,2-dichloroethene	µg/L	0.5	NA	10	60 - 140	115
		Bromochloromethane	µg/L	0.5	NA	10	60 - 140	108
		1,2-dichloroethane	µg/L	0.5	NA	10	60 - 140	120
		1,1,1-trichloroethane	µg/L	0.5	NA	10	60 - 140	128
		1,1-dichloropropene	µg/L	0.5	NA	10	60 - 140	88
		Carbon tetrachloride	µg/L	0.5	NA	10	60 - 140	123
		Dibromomethane	µg/L	0.5	NA	10	60 - 140	116
		Trichloroethene (Trichloroethylene,TCE)	µg/L	0.5	NA	10	60 - 140	118
		1,1,2-trichloroethane	µg/L	0.5	NA	10	60 - 140	119
		1,3-dichloropropane	µg/L	0.5	NA	10	60 - 140	122
		Tetrachloroethene (Perchloroethylene,PCE)	µg/L	0.5	NA	10	60 - 140	129
		1,1,1,2-tetrachloroethane	µg/L	0.5	NA	10	60 - 140	124
		cis-1,4-dichloro-2-butene	µg/L	1	NA	10	60 - 140	70
		1,1,2,2-tetrachloroethane	µg/L	0.5	NA	10	60 - 140	90
		1,2,3-trichloropropane	µg/L	0.5	NA	10	60 - 140	87
		trans-1,4-dichloro-2-butene	µg/L	1	NA	10	60 - 140	95
		1,2-dibromo-3-chloropropane	µg/L	0.5	NA	10	60 - 140	101
		Hexachlorobutadiene	µg/L	0.5	NA	10	60 - 140	110
	Halogenated Aromatics	Chlorobenzene	µg/L	0.5	NA	10	60 - 140	110
		Bromobenzene	µg/L	0.5	NA	10	60 - 140	105
		2-chlorotoluene	µg/L	0.5	NA	10	60 - 140	91
		4-chlorotoluene	µg/L	0.5	NA	10	60 - 140	121
		1,3-dichlorobenzene	µg/L	0.5	NA	10	60 - 140	112
		1,4-dichlorobenzene	µg/L	0.3	NA	10	60 - 140	109
		1,2-dichlorobenzene	µg/L	0.5	NA	10	60 - 140	100
		1,2,4-trichlorobenzene	µg/L	0.5	NA	10	60 - 140	76
		1,2,3-trichlorobenzene	µg/L	0.5	NA	10	60 - 140	88
	Monocyclic Aromatic	Benzene	µg/L	0.5	NA	10	60 - 140	90
		Toluene	µg/L	0.5	NA	10	60 - 140	109
		Ethylbenzene	µg/L	0.5	NA	10	60 - 140	78
		m/p-xylene	µg/L	1	NA	20	60 - 140	81
		o-xylene	µg/L	0.5	NA	10	60 - 140	98
		Styrene (Vinyl benzene)	µg/L	0.5	NA	10	60 - 140	72
		Isopropylbenzene (Cumene)	µg/L	0.5	NA	10	60 - 140	90
		n-propylbenzene	µg/L	0.5	NA	10	60 - 140	76
		1,3,5-trimethylbenzene	µg/L	0.5	NA	10	60 - 140	99
		tert-butylbenzene	µg/L	0.5	NA	10	60 - 140	93
		1,2,4-trimethylbenzene	µg/L	0.5	NA	10	60 - 140	92
		sec-butylbenzene	µg/L	0.5	NA	10	60 - 140	115
		p-isopropyltoluene	µg/L	0.5	NA	10	60 - 140	78
		n-butylbenzene	µg/L	0.5	NA	10	60 - 140	90
	Nitrogenous	Acrylonitrile	µg/L	0.5	NA	10	60 - 140	102
	Oxygenated Compounds	Acetone (2-propanone)	µg/L	10	NA	10	60 - 140	102
		MtBE (Methyl-tert-butyl ether)	µg/L	2	NA	10	60 - 140	92
		Vinyl acetate	µg/L	10	NA	10	60 - 140	121
		MEK (2-butanone)	µg/L	10	NA	50	60 - 140	119
		MIBK (4-methyl-2-pentanone)	µg/L	5	NA	10	60 - 140	71
		2-hexanone (MBK)	µg/L	5	NA	10	60 - 140	87
	Polycyclic	Naphthalene	µg/L	0.5	NA	10	60 - 140	104
	Sulphonated	Carbon disulfide	µg/L	2	NA	10	60 - 140	107
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	NA	5	60 - 140	115
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	NA	5	60 - 140	110
		d8-toluene (Surrogate)	µg/L	-	NA	5	60 - 140	93
		Bromofluorobenzene (Surrogate)	µg/L	-	NA	5	60 - 140	90
	Trihalomethanes	Chloroform (THM)	µg/L	0.5	NA	10	60 - 140	104
		Bromodichloromethane (THM)	µg/L	0.5	NA	10	60 - 140	121
		Dibromochloromethane (THM)	µg/L	0.5	NA	10	60 - 140	116
		Bromoform (THM)	µg/L	0.5	NA	10	60 - 140	95

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.

Volatile Petroleum Hydrocarbons in Water

Method: ME-(AU)-[ENV]AN433/AN434/AN410

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB091975.002		TRH C6-C10	µg/L	50	950	946.63	60 - 140	101
		TRH C6-C9	µg/L	40	780	818.71	60 - 140	95
	Surrogates	Dibromofluoromethane (Surrogate)	µg/L	-	4.5	5	60 - 140	90
		d4-1,2-dichloroethane (Surrogate)	µg/L	-	4.9	5	60 - 140	98
		d8-toluene (Surrogate)	µg/L	-	5.0	5	60 - 140	101
		Bromofluorobenzene (Surrogate)	µg/L	-	4.6	5	60 - 140	92
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	µg/L	50	640	639.67	60 - 140	100

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.

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE147143.018	LB091974.004	Mercury	mg/L	0.00005	0.0085	<0.0001	0.008	107

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE147182.001	LB091973.004	Total Mercury	mg/L	0.00005	0.0082	0.00005	-	-

Trace Metals (Dissolved) in Water by ICPMS — Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE147182.001	LB091934.004	Arsenic, As	µg/L	1	27	4	20	112
		Cadmium, Cd	µg/L	0.1	20	0.8	20	96
		Chromium, Cr	µg/L	1	20	1	20	95
		Copper, Cu	µg/L	1	60	42	20	87
		Lead, Pb	µg/L	1	39	19	20	99
		Nickel, Ni	µg/L	1	100	81	20	92
		Zinc, Zn	µg/L	5	520	500	20	98

Trace Metals (Total) in Water by ICPMS — Method: ME-(AU)-[ENV]AN022/AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE147182.001	LB091933.004	Total Arsenic	µg/L	1	29	7	20	107
		Total Cadmium	µg/L	0.1	22	1.0	20	103
		Total Chromium	µg/L	1	29	8	20	104
		Total Copper	µg/L	1	70	50	20	98
		Total Lead	µg/L	1	52	31	20	104
		Total Nickel	µg/L	1	110	88	20	91
		Total Zinc	µg/L	5	660	650	20	50 ⑤

MATRIX SPIKE DUPLICATES

SE147182 R0

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.

No matrix spike duplicates were required for this job.

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.sgs.com.au/~/media/Local/Australia/Documents/ Technical%20Documents/MP-AU-ENV-QU-022%20QA%20QC%20Plan.pdf

*	NATA accreditation does not cover tthe performance of this service.
-	Sample not analysed for this analyte.
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.
②	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.
⑤	Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
⑥	LOR was raised due to sample matrix interference.
⑦	LOR was raised due to dilution of significantly high concentration of analyte in sample.
⑧	Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
⑨	Recovery failed acceptance criteria due to sample heterogeneity.
⑩	LOR was raised due to high conductivity of the sample (required dilution).
†	Refer to Analytical Report comments for further information.

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source: M630_SR_20151216110247.pdf page: 1 SGS Ref: SE147182_COC

CHAIN OF CUSTODY

Environmental Strategies
PROVIDING BENEFITS

Client: Environmental Strategies
Contact Person: Ryan Wells
Project Mgr: Ryan Wells
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Client Project Number 15107
PO No.:
SGS Quote No. : SY150422-1IS (revised with LOR's)
Date results required: 3 day TAT (standard)
Report format: Esdat
Lab Comments:
Cooling Method: Crushed ICE
Metals (M10): As, Cd, Cr (total), Cu, Ni, Pb, Hg, Zn, Se, B.
Nutrients: pH, TP, P, NO2, NO3, NH3.

This COC is 'Privileged & Confidential' and is not to be distributed or disclosed to any person other than Environmental Strategies authorised personnel.

1. Ensure that all extracts are held in an appropriately refrigerated area for 40 days
2. Please see attached document which outlines the required LOR's for analytes
3. Please ensure the QA/QC frequency stipulated in SGS quotation SY150422-1-IS satified across the entire project sample matrix type.
4. All samples to be NATA Accredited unless otherwise stipulated in SGS quotation SY150422-1-IS, or subsequent revisions.
5. 'X' means the sample is to be tested by the laboratory for the relevant analytical method (where LOR's are specified in SGS Quotation SY150422-1-IS, including most recent revision).
6. All triplicate samples to be sent to Envirolab

					Tests Required											Bottles Used					Comments
SGS Lab ID	Client Sample ID or information	Depth	Date Sampled	Type of sample	Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)	PAHs	TRH	BTEX	VOCs	F&TC	E. Coli					40ml VOA Amber Glass Vials	Red Metal Plastic (Field Filtered)	Red Metal Plastic (Total)	Glass Amber 500ml	Green Plastic (non preserved)	Provide as much information about the sample as you can
1	T_5_ESMW05		9/12/2015	WATER	X	X	X	X								2	1	1	1	1	
2	T_5_ESMW06		9/12/2015	WATER	x	x	x	x	x							2	1	1	1	1	
3	T_ESMW10		9/12/2015	WATER	x	x	x	x								2	1	1	1	1	
4	DUPGS091215		9/12/2015	WATER	x	x	x	x								2	1	1	1	1	
5	T_1_ESMW01		10/12/2015	WATER	x	x	x	x								2	1	1	1	1	
6	T_5_ESMW04		10/12/2015	WATER	x	x	x	x	x							2	1	1	1	1	
7	T_ESMW07		10/12/2015	WATER	x	x	x	x								2	1	1	1	1	
8	T_ESMW08		10/12/2015	WATER	x	x	x	x								2	1	1	1	1	
9	T_ESMW09		10/12/2015	WATER	x	x	x	x								2	1	1	1	1	
10	FBGS101215		10/12/2015	WATER	x	x	x	x	x	x	x					2		1	1	1	
11	RINGS101215		10/12/2015	WATER	x	x	x	x	x	x	x					2			1		
12	TBGS101215		10/12/2015	WATER	x	x	x	x	x	x	x					2					
13	TRIP SPIKE		14/12/2015	WATER				x	x							1					
14	TRIP BLANK		14/12/2015	WATER	x	x	x	x	x	x	x					1					
15	T_5_ESMW05		15/12/2015	WATER						x	x									1	
16	T_ESMW10		15/12/2015	WATER						x	x									1	
17	T_1_ESMW01		15/12/2015	WATER						x	x									1	
18	T_ESMW08		15/12/2015	WATER						x	x									1	
19	T_ESMW09		15/12/2015	WATER						x	x									1	
20	DUPGS151215		15/12/2015	WATER						x	x									1	

Relinquished by: Environmental Strategies
Print Name: Greg Sheehan
Date & Time: 15.12.15 @ 1210
Signature

Received & Reliquished by (SGS Muswellbrook or Courier):
Print Name:
Receipt Date & Time: **Relinquished Date & Time:**
Signature

Received by (primary lab): SGS Sydney
Print Name: STUART TERRY
Date & Time: 16/12/15 10:10am
Signature

Received by (secondary lab): ELS
Print Name:
Date & Time:
Signature

Lab Use Only:
Lab Report Number:
Samples received: Cool or Ambient (circle one)
Temperature Received at: (if applicable) 5.6
Transported by: Hand delievered/courier
Security Seal Applied and Intact? (Yes/No)
Refer to Laboratory SRN for additional sample receipt/integrity details

SGS Alexandria Environmental
SE147182 COC
Received: 16 – Dec – 2015

MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

CERTIFICATE OF ANALYSIS

W1520129
[]

S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860801
Customer Reference Number:	
Site:	SE147182.015
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0700
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD		
ESCHERICHIA COLI COUNT:	Less than 1	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD		
TOTAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
TOTAL COLIFORMS NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007 by Membrane Filtration Method.

The time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:21/12/15

T.Morgan Laboratory Manager | T.Shetty Quality Manager | H.Sialepis Technical Officer | L.Vanhoff Technical Officer | K.McClenahan Scientific Officer | M.Lee Scientific Officer | P.Campora Scientific Officer | R.Bhatt Scientific Officer

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Accreditation No. 4034

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MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

CERTIFICATE OF ANALYSIS

W1520130
[]

S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860800
Customer Reference Number:	
Site:	SE147182.016
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD		
ESCHERICHIA COLI COUNT:	Less than 1	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD		
TOTAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
TOTAL COLIFORMS NOT DETECTED BY THE METHOD		

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007 by Membrane Filtration Method.

The time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:18/12/15

T.Morgan	T.Shetty	H.Sialepis	L.Vanhoff	K.McClenahan	M.Lee	P.Campora	R.Bhatt
Laboratory Manager	Quality Manager	Technical Officer	Technical Officer	Scientific Officer	Scientific Officer	Scientific Officer	Scientific Officer

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MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860799
Customer Reference Number:	
Site:	SE147182.017
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		
ESCHERICHIA COLI COUNT:	Less than 1	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		
TOTAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
TOTAL COLIFORMS NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007

Signed:. Date:18/12/15

T.Morgan	T.Shetty	H.Sialepis	L.Vanhoff	K.McClenahan	M.Lee	P.Campora	R.Bhatt
Laboratory Manager	Quality Manager	Technical Officer	Technical Officer	Scientific Officer	Scientific Officer	Scientific Officer	Scientific Officer

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860799
Customer Reference Number:	
Site:	SE147182.017
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
by Membrane Filtration Method.		

The time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:18/12/15

T.Morgan Laboratory Manager | T.Shetty Quality Manager | H.Sialepis Technical Officer | L.Vanhoff Technical Officer | K.McClenahan Scientific Officer | M.Lee Scientific Officer | P.Campora Scientific Officer | R.Bhatt Scientific Officer

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MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860798
Customer Reference Number:	
Site:	SE147182.018
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD		
ESCHERICHIA COLI COUNT:	Less than 1	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD		
TOTAL COLIFORM COUNT:	8 Approximate	colony forming units/100ml

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007 by Membrane Filtration Method.

The time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:21/12/15

T.Morgan Laboratory Manager | T.Shetty Quality Manager | H.Sialepis Technical Officer | L.Vanhoff Technical Officer | K.McClenahan Scientific Officer | M.Lee Scientific Officer | P.Campora Scientific Officer | R.Bhatt Scientific Officer

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860797
Customer Reference Number:	
Site:	SE147182.019
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 1	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD		
ESCHERICHIA COLI COUNT:	Less than 1	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD		
TOTAL COLIFORM COUNT:	17	colony forming units/100ml

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007 by Membrane Filtration Method.

The time between sampling and the commencement of testing should not exceed 24 hours.

Signed:. Date:21/12/15

T.Morgan	T.Shetty	H.Sialepis	L.Vanhoff	K.McClenahan	M.Lee	P.Campora	R.Bhatt
Laboratory Manager	Quality Manager	Technical Officer	Technical Officer	Scientific Officer	Scientific Officer	Scientific Officer	Scientific Officer

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MICROBIOLOGY FINAL REPORT

SONIC FOOD & WATER TESTING

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860796
Customer Reference Number:	
Site:	SE147182.020
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
FAECAL COLIFORM COUNT:	Less than 10	colony forming units/100ml
FAECAL COLIFORMS NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		
ESCHERICHIA COLI COUNT:	Less than 10	colony forming units/100ml
ESCHERICHIA COLI NOT DETECTED BY THE METHOD Note that the presence of competing background non-coliform organisms in the sample may have reduced the count obtained.		
TOTAL COLIFORM COUNT:	5 Approximate	colony forming units/100ml
Note that the presence of competing background organisms in the sample may have reduced the count obtained.		

METHODS

* Thermotolerant(Faecal)Coliform Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Escherichia coli Count - Australian Standard 4276.7-2007 by Membrane Filtration Method.
* Total Coliform Count - Australian Standard 4276.5-2007 by Membrane Filtration Method.

Signed:. Date:21/12/15

T.Morgan	T.Shetty	H.Sialepis	L.Vanhoff	K.McClenahan	M.Lee	P.Campora	R.Bhatt
Laboratory Manager	Quality Manager	Technical Officer	Technical Officer	Scientific Officer	Scientific Officer	Scientific Officer	Scientific Officer

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MICROBIOLOGY FINAL REPORT

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S.G.S AUSTRALIA PTY LTD
ENVIRONMENTAL SYDNEY TEAM
U16/33 MADDOX STREET
ALEXANDRIA NSW 2015

Lab Number:	246860796
Customer Reference Number:	
Site:	SE147182.020
Sample Type:	WATER
Sample Notes:	
Date and Time of Collection:	15/12/15,0000
Date and Time of Testing:	17/12/15,0800
Collected By:	The Client
Tested:	As Received

TESTS	RESULTS	UNITS
The time between sampling and the commencement of testing should not exceed 24 hours.		

Signed:. Date:21/12/15

T.Morgan Laboratory Manager, T.Shetty Quality Manager, H.Sialepis Technical Officer, L.Vanhoff Technical Officer, K.McClenahan Scientific Officer, M.Lee Scientific Officer, P.Campora Scientific Officer, R.Bhatt Scientific Officer

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Accreditation No. 4034

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SAMPLE RECEIPT ADVICE

SE147182

CLIENT DETAILS

Contact	Ryan Wells
Client	ENVIRONMENTAL STRATEGIES PTY LIMITED
Address	Suite 15201, Locomotive Workshop 2 Locomotive Street Eveleigh NSW 2015
Telephone	02 9690 2555 / 0408 649 917
Facsimile	(Not specified)
Email	ryanwells@environmentalstrategies.com.au
Project	**15107**
Order Number	(Not specified)
Samples	20

LABORATORY DETAILS

Manager	Huong Crawford
Laboratory	SGS Alexandria Environmental
Address	Unit 16, 33 Maddox St Alexandria NSW 2015
Telephone	+61 2 8594 0400
Facsimile	+61 2 8594 0499
Email	au.environmental.sydney@sgs.com
Samples Received	Wed 16/12/2015
Report Due	Fri 18/12/2015
SGS Reference	**SE147182**

SUBMISSION DETAILS

This is to confirm that 20 samples were received on Wednesday 16/12/2015. Results are expected to be ready by Friday 18/12/2015. Please quote SGS reference SE147182 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	20 Waters	Type of documentation received	COC
Date documentation received	16/12/2015	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	5.6°C
Sample container provider	SGS	Turnaround time requested	Two Days
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes	Number of eskies/boxes received	

Samples will be held for one month for water samples and two months for soil samples from date of report, unless otherwise instructed.

COMMENTS

PRIVILEGED AND CONFIDENTIAL
`Not to be distributed or disclosed to any person other than Environmental Strategies'
Microbiological analysis not conducted on samples FBGS101215, RINGS101512, TBGS101215 as the appropriate sterile bottles were not supplied.
Microbiological analysis subcontracted to Sonic Food & Water Testing, 31-33 Lawson Street Penrith NSW 2750, NATA Accreditation Number: 4034
Trip Blank sample analysed for BTEX and volatile TRH only.
Trp Spike sample analysed for BTEX only.

Results may be delayed for Micro analysis.

To the extent not inconsistent with the other provisions of this document and unless specifically agreed otherwise in writing by SGS , all SGS services are rendered in accordance with the applicable SGS General Conditions of Service accessible at http://www.sgs.com/en/Terms-and-Conditions/General-Conditions-of-Services-English.aspx as at the date of this document.
Attention is drawn to the limitations of liability and to the clauses of indemnification.

SAMPLE RECEIPT ADVICE

SE147182

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Low Level PAH (Poly Aromatic Hydrocarbons) in	Mercury (total) in Water	Trace Metals (Total) in Water by ICPMS	TRH (Total Recoverable Hydrocarbons) in Water	VOCs in Water	Volatile Petroleum Hydrocarbons in Water
001	T_5_ESMW05	22	1	7	9	10	8
002	T_5_ESMW06	22	1	7	9	78	8
003	T_ESMW10	22	1	7	9	10	8
004	DUPGS091215	22	1	7	9	10	8
005	T_1_ESMW01	22	1	7	9	10	8
006	T_5_ESMW04	22	1	7	9	78	8
007	T_ESMW07	22	1	7	9	10	8
008	T_ESMW08	22	1	7	9	10	8
009	T_ESMW09	22	1	7	9	10	8
010	FBGS101215	22	1	7	9	78	8
011	RINGS101215	22	-	-	9	78	8
012	TBGS101215	-	-	-	-	78	8
013	TRIP SPIKE	-	-	-	-	9	-
014	TRIP BLANK	-	-	-	-	10	8

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

SE147182

CLIENT DETAILS

Client ENVIRONMENTAL STRATEGIES PTY LIMITED

Project 15107

SUMMARY OF ANALYSIS

No.	Sample ID	Mercury (dissolved) in Water	Sample Subcontracted	Trace Metals (Dissolved) in Water by ICPMS
001	T_5_ESMW05	1	-	7
002	T_5_ESMW06	1	-	7
003	T_ESMW10	1	-	7
004	DUPGS091215	1	-	7
005	T_1_ESMW01	1	-	7
006	T_5_ESMW04	1	-	7
007	T_ESMW07	1	-	7
008	T_ESMW08	1	-	7
009	T_ESMW09	1	-	7
010	FBGS101215	1	-	7
015	T_5_ESMW05	-	1	-
016	T_ESMW10	-	1	-
017	T_1_ESMW01	-	1	-
018	T_ESMW08	-	1	-
019	T_ESMW09	-	1	-
020	DUPGS151215	-	1	-

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 .

APPENDIX J – PARCSS Review

Part A. Table-1 Quality Review Matrix (New Soil & Sediment Data) - Tomago Site Additional Baseline Assessment, Environmental Strategies Report No. 15107 (Feb. 2016).

Site Auditor Requirements: DQI-PARCCS Criteria	DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*																		DQI-PARCCS Findings, References & Review Notes.			
NEW Soil & Sediment Samples	-	-	Total Metals (M8-10)	TOC	PSD	EC	Salinity (calc)	pH	VOC's	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (BaP TEQ)	OCP's	PCB's	OPP's	PFOS/ PFOA	Fluoride (soluble)	Asbestos	**Environmental Strategies Report Ref.**	**NEPM 1999** (R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
				(SL selection)																				
Comparability: Experienced sampling team followed SAQP/ SOP's.	Skills & training records	Records Presented	Project authorisation, regulatory authorisation, and technical competency records of identified Environmental Strategy field samplers were presented (JO and GS).																			App. E, G, I.	(B2) 18.2.5, 19.6, 19.7, (B9) 4.2	ES Proposal Document & SAQP	Acceptable
Climatic conditions recorded and discussed	Bore Log or Field Records	Records Presented	BOM conditions on the dates of sampling presented in Appendix J, to identify dates of potential or actual sampling bias. Weather conditions were not considered to have caused sampling bias on the dates of soil, sediment, water sampling.																			App J		-	Acceptable
Site History.	Information Available	Information Presented	Consideration of: Site Identification, Notices (CLR: CLM Act 1997 & PEO Act 1997), WorkCover DG Licenses, Council Records, Conservation Management Plan, Site Inspection, Site Photos, Historical Aerial Photos, Workplace Records, Imported Fill, Past Contamination Assessments, Interviews & Meetings with past & present site owners and/ or occupiers, including technical representative. Industrial processes considered where applicable. **Accuracy of Site History collected: Acceptable**																			Exec. Summary, Sections 1.1, 1.3, 2, 3.1, 3.2, 3.3, App B, C, L.	(B2) 3, 3.1, 3.2, 3.3, 3.4, 3.6	AGLM Data Room	Acceptable
Primary Laboratory Soil Numbers (SGS)	IA: >5 ha	Soils & Sediments	47 +15 (Pb)	0	Nil	Nil	Nil	Nil	24	23	47	47		47	19	27	19	Nil	33	40		Sections 4.1, 7.1, 8.2, App. E, G, I.	(B2) 5.3, 5.5, 6.3, 6.4	-	Acceptable, followed the SAQP as approved by AGLM
Primary Laboratory Sediment Numbers (SGS)			1	1	Nil	Nil	Nil	Nil	1	1	1	1		1	Nil	Nil	Nil	Nil	Nil	Nil					
Primary Laboratory COC Batches Submitted (SGS)			2	1	Nil	Nil	Nil	Nil	2	2	2	2		2	1	2	1	Nil	1	2					
Subcontracting	NATA Accredited.	All NATA Accredited	Nil	Nil	N/A	N/A	N/A	N/A	Nil	Nil	Nil	Nil		Nil	Nil	Nil	Nil	N/A	Nil	Nil					Acceptable
Primary Laboratory NATA Accredited Methods	NATA Accredited.	All NATA Signatory, ex Trace Asbestos	7.84.01	7.84.51	-	-	-	-	7.84.04 7.84.21 7.84.99	7.84.21	7.84.12	7.84.12		7.84.22	7.84.02	7.84.03	7.84.02	-	7.81.31	7.84.31		Sections 4.1, 10.2, 12.1, App. I.	(B2) 19.8, (B3) 2.4, 3.2, 3.4.	SAQP 3.1, 15.1, NATA Tech. Notes 17 & 23	***Note-1***
	Experienced lab Analysts		Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes		Yes	Yes	Yes	Yes	-	Yes	Yes, except LOR 0.01%w/w		App. E, G, I.			
	Lab Ref.	Records Presented	AN40/ AN320/ AN312	AN203/ AN273	-	-	-	-	AN433/AN434		AN433/AN434/AN410	AN088/ AN403		AN088/ AN420	AN400/ AN420	AN400/ AN420	AN400/ AN420	-	AN141	AN602		Sections 4, 9, 12.1, App. I.	(B2) 19.8, (B3) 2.2, 2.6, 4.2.5, 4.3.1, 5.1.	-	Acceptable, noting SGS extraction of soils USEPA Mod. Ref. 3550 (medium/ high conc. method as default). No pre-screening for <20mg/kg low method. Fluoride (soluble) determined rather than Total Fluoride as per secondary lab results.
	Analytical Technique	Records Presented	ICP/MS, ICP/OES, CV-AAS	LECO & Heanes Oxidation	-	-	-	-	1xExt. PT-GC/MS		1xExt. PT-GC/MS	1xExt, GC/FID		1xExt, GC/MS	1xExt, GC/dECD	1xExt, GC/dECD	1xExt, GC/dECD	-	ISE	PLM & DS					
	Consistent (M, SS, units,)	Consistent	Yes	Yes	-	-	-	-	Yes		Yes	Yes		Yes	Yes	Yes	Yes	-	Yes	Yes				-	
	Applicable USEPA/ APHA Ref.	USEPA/ APHA Ref.	USEPA 200.8, 6010C , APHA 3112/ 3500	Furnace-IR Cell, Heanes Ox RH 6B1	-	-		-	USEPA 5030B, 8020A, 8260,		USEPA 5030B, 8020A, 8260,	-		USEPA 8270D, 3500C	USEPA 8080, 8140,3510, 3550			-	APHA F-C	AS4964			(B3) 4.2.1.	-	
Appropriate & Consistent Analytical Methods (incl. screening for low or med/high conc.)	NEPM / APHA Preferred.	NEPM/APHA or Equivalent.	NEPM 2013 (B3) 7.2, 7.3, 7.4	NEPM 2013 (B3) (6.6)	-	-	-	-	NEPM 2013 (B3) 10.1.3, 10.1.4	NEPM 2013 (B3)Mth. 501 (10.1)	NEPM 2013 (B3)Mth. 501 (10.1.5)	NEPM 2013 (B3) 10.2.7-8		NEPM 2013 (B3) M502 (10.2.3)	NEPM 2013 (B3) M504 (10.2.5)		NEPM 2013 (B3) M505 (10.2.6)	-	NEPM 2013 (B3) M404(8.2)	AS4964			(B3) 6, 7, (B4) 3.2.1, 3.2.3,	-	Acceptable, noting Soluble F method rather than Total F.
Laboratory NEPM Statement of Compliance.		SGS Response	Refer to SGS Compliance Statement received by email (dated 12.01.16). In respect of the NEPM 1999 (revision 2013), the soil test-work methods applied are based upon methods listed in the 6, 7, 8 and 10 of this document and comply noting that determining if samples (by screening) require the low level extraction procedure for SVOC is not performed. Organic Methods: AN403, AN420 and AN433, Physical/Inorganic Methods: AN005, AN101, AN106, AN122, AN142, AN188, AN602. Regarding sediment samples with high moisture, as per our national quality manager - LORs (and MU) have been determined through method validation and the confidence limit of 95% is valid with or without application of a moisture factor for high moisture samples. Applying a linear factor to the LOR for high moisture samples does not change the confidence limit.																			-	(B2) 19.9,	SGS Letter, dated dd.mm.yy	Acceptable
Potential SGS Method Limitations & Interferences		As Indicated	Nil	Nil	-	-	-	-	Nil	Nil	Nil	Yes, refer to SGS analytical method summary		Nil	Nil	Nil	Nil	-	Nil	Nil		App. I	(B3) 6, 7, (B4) 3.2.1, 3.2.3,	SGS Letter, dated dd.mm.yy	
Extraneous Sample Wt. Material Removed	As Indicated	Nil Reported	Nil reported under NATA accredited reporting comments, unknown if any extraneous material had been removed by the laboratory sample preparative steps.																			App. I	(B3) 4.2.1,	-	Acceptable

Site Auditor Requirements: DQI-PARCCS Criteria	DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*																			DQI-PARCCS Findings, References & Review Notes.			
Laboratory LOR/ PQL's (mg/kg)	Satisfy SAQP	As Indicated	0.1-100	0.02% w/w	-	-	-	-	0.1-10	0.1-0.3	20-25	20	45	45	0.1	0.1-0.2	0.2	0.2-0.5	-	0.5	Present/ Not Present, Trace 0.01 %w/w	Sections 6.1, 6.2, App. I.	-	-	***Note-1***. Trace Asbestos Fibres reported as Not NATA.

Part A. Table-2 Continued (New Soil & Sediment Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria		DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*																		DQI-PARCCS Findings, References & Review Notes.			
NEW Soil & Sediment Samples		-	-	Total Metals (M8-10)	TOC	PSD	EC	Salinity (calc)	pH	VOC's	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (BaP TEQ)	OCP's	PCB's	OPP's	PFOS/ PFOA	Fluoride (soluble)	Asbestos	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
				(SL selection)																					
Comparability & Sensitivity	Mass Soil used in Sample Preparation	As Indicated	As Indicated	2g	0.2-2g	-	-		-	5g			10g				-		-	-	-	N/A	App. I	-	Preliminary Lab. Audit	Acceptable
	Volume Reagent/ Solvent used in Sample preparation	As Indicated	As Indicated	2.5ml HCl+ 2.5m lHNO$_3$	Not Provided	-	-		-	10ml MeOH			20ml DCM/ Acetone (1:1)				-		-	-	-	N/A	App. I	-		Acceptable
	Digestion/ Extraction Time	As Indicated	As Indicated	2hr Digest	Not Provided	-	-		-	1hr	1hr	1hr	1hr				1hr	1hr	1hr	-	-	N/A	App. I	-		Acceptable, noting single extraction (medium/ high level method).
	Sample Prep Cleanup Technique	As Indicated	As Indicated	Nil	N/A	-	-	-	-	N/A	N/A	N/A	Nil			N/A	Nil	Nil	Nil	-	N/A	N/A	App. I	-		Acceptable
	Laboratory MDL's reported (mg/kg)	As Indicated	Not Reported	Not reported, available upon request from the primary laboratory (periodically reviewed by NATA assessments).																			-	-	-	Acceptable
	SGS Method Dilutions (LOR's ≤ SAC's)	As Indicated	LOR's ≤ SAC's.	Yes	N/A	-	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	N/A	App. I	-	-	Acceptable
	Laboratory LOR/ PQL Appropriate & Consistent	LOR's≤SIL's HIL-D, CRC Care HSL A&B	LOR's ≤ SAC's.	Yes	N/A	-	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	N/A	App. I	(B2) 19.8, (B3) 2.3.7, 3.2.3.2	-	Acceptable
Precision	Primary Lab Dup. (CP): Client Parent Batch. (NCP): Non-Client Parent Batch	(1/10 batch) default A/C 60%RPD.	(CP), <LOR, 0-62 %RPD	7x(CP), <LOR, 2-58 %RPD	Nil, (NCP)	-	-	-	-	1x(CP), <LOR	3x(CP), <LOR	6x(CP), <LOR	6x(CP), <LOR	6x(CP), <LOR	6x(CP), <LOR	6x(CP), <LOR, 0-62 %RPD	1x(CP), <LOR	5x(CP), <LOR	3x(CP), <LOR	-	2x(CP), 1-12 %RPD	N/A	Sections 12.5, App. I	Vol.3. B2. 19.9, Vol.4. B3. 3.3.3	-	Acceptable
	Intra-lab Dupl's. (ILD) SGS (Sydney)	ILD/ ILS at 5% 100 %RPD if <5*LOR, 75%RPD if 5-10xLOR, 50%RPD if ≥10*LOR N/A	Nil, <LOR, 0-105 %RPD	5xILD's <LOR, 0-105 %RPD	Nil	-	-	-	-	1xILD's <LOR	4xILD's <LOR	4xILD's <LOR	4xILD's <LOR	4xILD's <LOR	4xILD's <LOR	4xILD's <LOR	1xILD's <LOR	1xILD's <LOR	1xILD's <LOR	-	1xILD's 52 %RPD	1xILD's Not Detected	Sections 11.3, 11.4, App. I	Vol 3. B2. 5.4.2, 3.5.1, 3.5.3, 19.7, 19.8	-	**Note-2**
	Inter-lab Dupl's. (ILS) ELS (Sydney)		Nil, <LOR, 0-73 %RPD	4xILS's <LOR, 0-73 %RPD	Nil	-	-	-	-	1xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	Nil	Nil	Nil	-	Nil	1xILS's Not Detected	Sections 11.3, 11.4, App. I	Vol 3. B2. 5.4.2, 3.5.2, 3.5.3, 19.7, 19.8	-	**Note-3**
	Additional Replicates		Asbestos Samples	Nil	Nil	-	-	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	Nil	Yes	App. I	As per ILD's & ILS's	-	Acceptable, noting Asbestos samples 1,3,5,7,9,11,14-20 were ashed after initial SLPM & re-examined +trace fibre analysis.
Accuracy	Primary Lab MS (CP): Client Parent Batch. (NCP): Non-Client Parent Batch	(1/20 Sample Batch) General: 70-130%R Phenols: 20-130%R SVOC's: 20-140%R	(CP), N/A, (NCP),65-228 %R	5x(CP) 80-109 %R. (Pb) 228 %R	Nil, (NCP)	-	-	-	-	Nil	1x(CP) 69-104 %R	3x(CP) 65-133 %R	2x(CP) 85-123 %R	2x(CP) 85-115 %R	Nil	2x(CP) 79-104 %R	1x(CP) 75-105 %R	1x(CP) 95 %R	1x(CP) 71-95 %R	-	Nil	N/A	Sections 12.7, App. I.	Vol.4. B3. 3.3.5	-	Acceptable, noting Pb (Soil TSG10) 12 mg/kg background (MS conc. 50mg/kg; 228 %R).
	Primary Lab Organic Surrogate Spikes		S1: Nil,70-125 %R	N/A	N/A	-	-	-	-	72-113 %R	82-125 %R		Nil			70-92 %R	71-110 %R	71-117 %R	70-78 %R	-	N/A	N/A	Sections 12.3, App. I.	Vol.4. B3. 3.3.6	-	Acceptable, noting no TRH%R's.
			S2: Nil,72-130 %R	N/A	N/A	-	-	-	-	79-130 %R	82-129 %R		Nil			72-114 %R	Nil	Nil	72-108 %R	-	N/A	N/A				Acceptable, noting no secondary OCP %R's.
			S3+: Nil, 70-129 %R	N/A	N/A	-	-	-	-	70-129 %R	71-129 %R		Nil			72-104 %R	Nil	Nil	Nil	-	N/A	N/A				Acceptable, noting no secondary OCP %R's.
	Primary Lab Control Sample (LCS)		Nil, 67-135 %R	90-100 %R	98-102 %R	-	-	-	-	67-128 %R	67-94 %R	71-135 %R	70-123 %R	88-113 %R	70-80 %R	71-117 %R	75-125 %R	91-113 %R	71-94 %R	-	Nil	N/A	Sections 12.4, App. I.	(B3) 3.3.4	-	Acceptable, noting %R range marginally wider than preferred A/C.
	Primary Lab Method Blanks (MB)	<LOR per Process Batch.	<LOR.	<LOR.	<LOR.	-	-	-	-	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	<LOR.	-	<LOR.	N/A	Sections 12.6, App. I.	(B3) 3.3.2	-	Acceptable
	Proficiency Testing Programs (3 yrs)	Acceptable Results	Records from past 2 years	Records	-	-	-	-	-	-	Records	Records	Records	Records	Records	-	Records	Records	Records	-	Records	Records	-	(B2) 19.8	Preliminary Lab. Audit	Acceptable, refer to laboratory records past 2 yrs provided.

Part A. Table-3 Continued (New Soil & Sediment Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria		DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*																		DQI-PARCCS Findings, References & Review Notes.			
NEW Soil % Sediment Samples		-	-	Total Metals (M8-10)	TOC (SL selection)	PSD (SL selection)	EC (SL selection)	Salinity (calc) (SL selection)	pH (SL selection)	VOC's	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (BaP TEQ)	OCP's	PCB's	OPP's	PFOS/ PFOA	Fluoride (soluble)	Asbestos	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
PARCCS	Secondary Laboratory QA/QC Data ELS (Syd) NATA Accreditation No. 2901.	NATA Accredited.	All NATA Accredited	7.84.01	7.81.32 (7.84.31)	-	-	-	-	7.84.04 7.84.21 7.84.99	7.84.21	7.84.12	7.84.12	7.84.12	7.84.12	7.84.22	-	-	-	-	7.81.31	7.84.31	Sections 4.1, 10.2, 12.1, App. I.	As per Primary Lab	-	Acceptable
		Subcontract	All NATA Accredited	Nil	NMI (Syd)	-	-	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	-	-	Nil	Nil	Sections 4.1, 7.1, 8.2, App. E, G, I.		-	Acceptable
		Analytical Technique	Records Presented	ICP/AES CV/AAS	Soils: Titration, Sed: LECO	-	-	-	-	PT-GC/MS		PT-GC/MS	GC/FID			GC/MS	-	-	-	-	Caustic Fusion, ISE	PLM, DS	Sections 4, 9, 12.1, App. I.		-	Acceptable
		As per Primary Lab	LOR/ PQL (mg/kg)	0.1-10	Soils: 1000, Sed: 200	-	-	-	-	0.2-1	0.2-10	25	50	100	100	0.01 - 0.02	-	-	-	-	50	Present/ Not Present, 0.01 %w/w			-	ELS Rpts 132796, 137909 & 137753 Vinyl chloride LOR 1mg/kg > dermal contact criteria of 0.1mg/kg.
			Preservation	ZHE, Glass Jar, teflon lined lid, chilled.		-	-	-	-	ZHE, Glass Jar, teflon lined lid, chilled.							-	-	-	-	ZHE, Glass Jar, teflon lined lid, chilled.				-	Acceptable
			THT's	8-9 days	9 days	-	-	-	-	8 days	8 days	8 days	8 days			8 days	-	-	-	-	9 days	N/A			-	Acceptable
			Surrogates	N/A	N/A	-	-	-	-	101 %R	81-89 %R		86-88 %R			103-104 %R	-	-	-	-	N/A	N/A				Acceptable
				N/A	N/A	-	-	-	-	81-89 %R	Nil		Nil			Nil	-	-	-	-	N/A	N/A				Acceptable, noting no secondary PAH's %R reported.
				N/A	N/A	-	-	-	-	94-99 %R	Nil		Nil			Nil	-	-	-	-	N/A	N/A				
			Duplicates	Nil	Nil	-	-	-	-	1x(CP), <LOR	1x(CP), <LOR	1x(CP), <LOR	Nil	Nil	Nil	Nil	-	-	-	-	Nil	N/A				Acceptable, noting COC batches < 20 samples.
			MS	Nil	Nil	-	-	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	-	-	-	Nil	N/A				Acceptable, noting COC batches < 20 samples.
			LCS	98-118 %R	110 %R	-	-	-	-	72-87 %R	96-99 %R	98 %R	80-118 %R	98 %R	80%R	92-129 %R	-	-	-	-	Total F. 75 %R	N/A				Acceptable
			MB	<LOR	<LOR	-	-	-	-	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	-	-	-	-	<LOR	N/A				Acceptable
Representativeness	Appropriate Sample Collection, Handling, Storage for specific Analytical Group	Soils (Note-4)	All Samples Comply.	Yes	-	-	-	-	-	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	-	Yes	Stockpile soils sub-sampled by lab (np separate zip-lock bag) collected	Sections 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.8, App. E, F, G, H, I, K.	(B2) 5.3, 5.4.4, 19.7 (B3) 4.1, 4.4.	AS4482.1: 2005, AS4482.2: 1999, AS4439.2: 1998	Acceptable, refer to the Internal Audit (field sampling) conducted by ES.
		Testpits (Note-4)	N/A	Nil	Nil	-	-	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	Nil	Nil			-	N/A
		Sediments (Note-4)	All Samples Comply.	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes			Yes	-	-	-	-	-	-			-	Acceptable.

Part A. Table-4 Continued (New Soil Sediment Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria		DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*																			DQI-PARCCS Findings, References & Review Notes.			
NEW Soil & Sediment Samples		-	-	Total Metals (M8-10)	TOC (SL selection)	PSD (SL selection)	EC (SL selection)	Salinity (calc) (SL selection)	pH (SL selection)	VOC's	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (BaP TEQ)	OCP's	PCB's	OPP's	PFOS/ PFOA	Fluoride (soluble)	Asbestos	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
Representativeness	Appropriate Sample Preservation	All samples comply with NEPM (2013).	As Indicated.	Soils collected in ZHE glass jar with teflon liner, sediments collected in 2x250ml ZHE glass jars with teflon liner.																			Sections 8.8, App. E, F, G, I.	(B2) 5.4.5, 19.7, 19.8, (B3) 4.3.1, 4.5.1,	-	Acceptable
	Recommended THT		THT Managed Indicated.	M9 6 mths, Hg 28 days	28 days, 6mths (freeze)	7 days (USEPA 14 days)	7 days (NEPM 2013)		7 days (NEPM 2013)	14 days (NEPM 2013), except VC, styrene, 2-chloroethyl ether (7 days)			14 days (NEPM 2013)			14 days (NEPM 2013)	28 days (NEPM 2013)	28 days (NEPM 2013)	28 days (NEPM 2013)	28 days (NEPM 2013)	TF: 6 mths	Indefinite				Acceptable
	COC & SRN: Receipt by Lab in Good Condition & Secure Custody.		Yes	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Yes	Yes	Sections 11.2, App. E, F, G, I.	(B2) 5.4.5, 19.7, 19.8, (B3) 4.3.1, 4.5.1,	-	Acceptable, refer to ***Note-5***
	Field Screening Method Calibration (PID)	Compliant Calibration.	Yes	Calibrated PID (10.6eV lamp) used to screen soils, noting reasonable correlation with NATA primary lab results. Calibration certificates presented Annex E. PID PhoCheck Tiger Meters supplied by Airmet (S/N: T-105429, T-106085) calibrated 4.11.13 & 13.11.13 (S/N PID 10.6eV lamp not provided). PID Phocheck tiger (S/N: T-105517) calibrated 3.12.13. PID Minirae 3000 Meters supplied by Airmet (S/N: 592-001272, 592-001359) calibrated 18.11.13, 22.11.13 (S/N PID 10.6eV lamp not provided). PID Minirae Lite (no S/N) calibrated 21.11.13.																			Sections 11.9, App. E, F, G, I.	(B2) 7.4, 7.4.3, 19.7	-	Acceptable
	Primary Lab - Soils THT's. SGS B1: SE145989. S:10-11.11.15.	All samples comply with NEPM (2013).	All Samples Comply.	Prep. 17-18/11	-	-	-	-	-	Ext. 16/11	Ext. 16/11	Ext. 16/11	Ext. 16/11	Ext. 16/11	Ext. 16/11	Ext. 16/11	-	Ext. 16/11	-	-	-	N/A	Sections 12.2, App. E, F, G, I.	(B2) 5.4.4, 19.8, (B3) 4.4.1 - Table1.	AS4482.1: 2005, AS4482.2: 1999, AS4439.2: 1997	Acceptable.
	Primary Lab - Soils THT's. SGS B2: SE146247. S:16-19.11.15.			Prep. 27-30/11	Prep. 1/12	-	-	-	-	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	Ext. 24/11	-	Prep. 1/12	N/A				Acceptable.
	Trip Spikes.	BTEX 70-130%R, <60%R discuss.	2xTS 78-88 %R	N/A	N/A	-	-	-	-	-	2xTS 78-88 %R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	Sections 11.10, App. E, F, G, I.	(B2) 19.7	-	Acceptable.
	Trip Blank (volatile analytes)	Collect 1 per sampling event, result <PQL.	2XTB <LOR	N/A	N/A	-	-	-	-	-	2XTB <LOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	Sections 11.7, App. E, F, G, I.	(B2) 19.7	-	Acceptable.
	Background Samples (control sample).		N/A	N/A	N/A	-	-	-	-	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	N/A	N/A	(B1) 2.4.5 (TRH), 2.5.7 (EIL), (B2) 19.7, (B4) 3.2.3	-	Acceptable, noting background samples integrated into primary sampling design by AGLM.
	Rinsate Blank (water rinse over sampling equipment)		As Indicated	Nil	N/A	-	-	-	-	Nil	N/A	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	N/A	N/A	Sections 11.6, App. E, F, G, I.	(B2) 19.7	-	No Soil RB's collected from B1-B2.
Completeness	Appropriate Sampling, Sample Documentation & Descriptions Completed	Soils (Note-4)	All Samples Comply.	Yes	-	-	-	-	-	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	-	Yes	Stockpile soils sub-sampled by lab (np separate zip-lock bag) collected	Sections 8.1, 8.2, 8.3, 8.4, 8.5, 8.6, 8.8, App. E, F, G, H, I, K.	(B2) 5.3, 5.4.4, 19.7 (B3) 4.1, 4.4.	AS4482.1: 2005, AS4482.2: 1999, AS4439.2: 1998	Acceptable, refer to the Internal Audit (field sampling) conducted by ES.
		Testpits (Note-4)	N/A	Nil	Nil	-	-	-	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	Nil	Nil			-	N/A
		Sediments (Note-4)	All Samples Comply.	Yes	Yes	-	-	-	-	Yes	Yes	Yes	Yes			Yes	-	-	-	-	-	-			-	Acceptable.
	All Critical Samples Collected/ Analysed According to Site History, CSM Data Gaps, COC/ SAQP, and Compared to the Criteria.	All Samples.	All Samples Comply.	The Completeness of Sampling Relative to the SAQP was considered to have been achieved as there were no sampling locations that were abandoned, restricted due to OHS/ disruption to site operations, or otherwise resulting in a recorded SAQP deviation. In addition, the selection of sampling locations as per the SAQP was conducted and effected by appropriately qualified and experienced field samplers under the supervision of the field supervisor, and ES Project Director. There were no significant laboratory QA/QC non-compliances noted.																			Sections 4, 7, 8, 10, 11, 12, App. E, F, G, I.	(B2) 7.3, 19.7	AS4482.1: 2005, AS4482.2: 1999, AS4439.2: 1997	Acceptable.

Key: Acceptable, complies with the DQI-PARCCS criteria.

Minor DQI-PARCCS Non-compliance, or otherwise noteworthy Review Finding, requiring professional judgement by the authorised and responsible Site Auditor.

Not Acceptable, does not comply with an individual DQI-PARCCS criteria.

INP: Supplementary Information Not Provided by the data source provider, N/A: Not Applicable.

DQI-PARCCS Findings and Review Notes have been compiled from the spot audit of the following laboratory reports (including associated COC's & SRN's): primary laboratory (SGS Sydney) and secondary laboratory (ELS Sydney).
- laboratory certificates were reviewed according to the NEPM 1999 (Amendment 2013) PARCCS criteria after being received from AGLM.

1. SGS (primary soils & sediments): SE145989, SE146247.

2. ELS (secondary soils & sediments): 137909, 137753.

Notes- Additional Detailed Auditor Comments relating to Field and Laboratory QA/QC Not Satisfying DQI-PARCCS (listed herein).

1. The following primary laboratory analytes in soils/ sediments were Not-NATA Accredited:

   i) Trace Asbestos Fibres (LOR 0.01 %w/w) not NATA as reported by SGS on final Certificate of Analysis

   - The SGS laboratory response (email 12.01.16) was, "The Fibre ID report that we have issued with each job is accredited, and features all the qualitative information on the analysis, while also not suffering the issue with the LOR being marked as non-accredited. I'm hoping that this can suffice in the short term, we are developing a fix for this in our analytical report, but it may take some time to deploy. Please note our accreditation is not changing, it is a matter of semantics as to why this was marked as non-accredited".

2. The intra-duplicate variability was noted as follows:

   i) Sample T2_ESMW02 0.5 sampled 10.11.15 (SGS Rpt SE145989) reported:

      a) Metals: Copper concentration of 0.9mg/kg & 2.9mg/kg (LOR 0.5mg/kg) producing 105 %RPD,
      b) Metals: Chromium concentration of 36mg/kg & 15mg/kg (LOR 0.3mg/kg) producing 82 %RPD,
      c) Metals: Zinc concentration of 9.2mg/kg & 21mg/kg (LOR 0.5mg/kg) producing 78 %RPD

3. The intra-duplicate variability was noted as follows:

   i) Sample T_ESMW10-1 sampled 18.11.15 (SGS Rpt SE146247) reported:

      a) Metals: Zinc concentration of 1.4mg/kg & 3mg/kg (LOR 0.5mg/kg) producing 73 %RPD

4. Soil sampling was confirmed by an internal field audit of sampling activities conducted by Environmental Strategies, including various days of sampling activity witnessed by the AGLM technical advisor/ delegate as follows:

   i) Boreholes were drilled using either track-mounted geoprobes using push tube drilling techniques or truck-mounted drill rigs using split tube samplers in order to collect undisturbed samples. The truck-mounted drill rigs were used as a contingency where the geoprobe refused on fill materials prior to reaching the target depth (refer to bore logs for relevant sample ID's). This is in accordance with NEPM 1999 (amendment 2013) field practices.

   ii) Test PitsTest pits were excavated using long-reach backhoes. The test pits were used to determine whether wastes have been dumped or buried in areas that were thought to appear as disturbed ground.

   iii) Sediment Sampling (In areas other than Lake Liddell) were collected using sludge sampling equipment that was designed to retain samples from non-cohesive materials, including underwater sediment in shallow lakes, streams, and various types of impoundments with a capability of capturing an undisturbed sample. The samplers were used to take undisturbed samples up to 0.3m thick in single use sealable plastic liners, suitable for geotechnical and/or chemical analysis. Excess or unsuitable sediment was collected and stored as waste in 200 L steel drums as for waste materials from soil bores and test pits – and not disposed into the water body.

      Each bore hole and test pit were extended to a maximum depth of 3 m below surface level or at least 0.5 m into natural material or to refusal (whichever was shallower). The presence of waste materials was confirmed where identified during test pitting, and ES continued to excavate (with AGLM's instruction) until the vertical extent of the waste materials were determined (or to the maximum extent of the backhoe reach) as appropriate (refer to bore logs for relevant sample ID's).

      Three (3) or more soil samples were collected from each borehole and test pit, where possible, with two (2) selected samples submitted for chemical analysis. The remaining samples were held for potential additional analysis. Sampling intervals were typically:

      - One in the fill;
      - One in the natural material;
      - On the basis of field observations, evidence of staining or olfactory indicators; and
      - At any changes in the strata targeting fill and natural material.

      All soil samples collected for chemical analysis were screened in the field for Volatile Organic Compounds (VOCs) using a Photo Ionisation Detector (PID). The PID was calibrated at the start and end of each day of use (refer to field records).

The locations of bores and test pits were surveyed using a system relative to Australia Map Grid (AMG).

Fill and natural soil samples were collected from dedicated HDPE push tube sleeves (minimising the potential for cross-contamination and sample disturbance) using disposable nitrile gloves. A solid-flight auger bit was available for use where sample recovery from the push tube was not optimum, reserved for use under strict supervision ensuring that a sample was obtained only from the bottom of the cutting bit and not allowing cross-contamination of the sample and minimising the loss of VOCs (refer to bore logs for relevant sample ID's).

Soil sampling from test pitting were collected from the centre of the excavator bucket by hand using disposable nitrile gloves, avoiding soil which had come into contact with the excavator bucket (minimising the opportunity cross-contamination and minimising the loss of VOCs). Excess soil was shaken from the excavator bucket between sampling locations. Soil that was difficult to remove from the bucket was dry brushed using a stainless steel or stiff nylon brush. Soil samples were collected by hand using disposable nitrile gloves.

Rinsate blanks, trip blanks and trip spikes were collected on a regular basis to monitor for cross contamination between sampling locations, and volatile organic compound losses (trip spike), volatile organic compound contamination (trip blanks) from field sampling locations enroute to the laboratory under COC courier custody.

The soil samples were then subdivided with one part being put into snap -lock plastic bags for screening with the calibrated PID and the other being placed into a laboratory prepared 250 ml glass jar with Teflon lined lids with the details of the sample, including the sample name, the job number, the date of sample and the sample depth.

For additional sample integrity, the disposable nitrile gloves will be replaced between each sampling location.

Each soil sample was described in general accordance with the Unified Soil Classification System (USCS) and details of any discolouration, staining, odours or other indicators of contamination and the presence of anthropogenic materials, especially asbestos-containing materials, was noted.

Samples that exhibited visual or olfactory evidence of contamination were submitted for laboratory analysis. If no PID or sensory indication of contamination was noted, one sample of fill material and representative natural samples was submitted for analysis. Depth samples, typically comprising changes in soil type, have been retained for future analysis by the laboratory for the specified period (laboratory quotation terms), as required.

Soil samples were then labelled and placed on ice in an insulated container stored in a secure location with chain-of-custody documentation and dispatched to the nominated primary and/ or secondary laboratories for analysis.

5. The following soil/ sediment COC batches included a laboratory comment on the applicable SRN:

   i) Sample Batch (SGS Rpt SE145989, 29 x soils , Sampled 10-11.11.15):
      a) Asbestos samples will be sub-sampled from the jar provided, as a separate bag was not supplied for analysis. The final report included a comment, "A portion of the sample supplied has been sub-sampled for asbestos according to SGS in-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container".

   ii) Sample Batch (SGS Rpt SE146247, 27 x soils , Sampled 16-19.11.15):
      a) Asbestos samples will be sub-sampled from the jar provided, as a separate bag was not supplied for analysis. The final report included a comment, "A portion of the sample supplied has been sub-sampled for asbestos according to SGS in-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied. SGS Environmental Services recommends supplying approximately 50-100g of sample in a separate container".

END OF REVIEW FINDINGS - Part A (Tables 1-4).

Part A. Table-5 Quality Review Matrix (New Groundwater Data) - Tomago Site Additional Baseline Assessment, Environmental Strategies Report No. 15107 (Feb. 2016).

Site Auditor Requirements: DQI-PARCCS Criteria	DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01)*														DQI-PARCCS Findings, References & Review Notes.			
Groundwater Samples	-	-	Dissolved Metals (M10)	Total Metals (M10)	TOC	VOC's (incl. BTEX)	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (LL) (BaP TEQ)	Faecal coliforms	Total coliforms	E. coli	PFOS/ PFOA	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
Comparability: Experienced sampling team followed SAQP & DQO Steps.	Skills & training records	Records Presented	Project authorisation, regulatory authorisation, and technical competency records of identified Environmental Strategy field samplers were presented (JO, GS).														App. E, G, I.	(B2) 18.2.5, 19.6, 19.7, (B9) 4.2	ES Proposal Document & SAQP	Acceptable
Climatic conditions recorded and discussed	GWM Well Log or Field Records	Records Presented	BOM conditions on the dates of sampling presented in Appendix J, to identify dates of potential or actual sampling bias. Weather conditions were not considered to have caused sampling bias on the dates of soil, sediment, water sampling.														App J		-	Acceptable
Site History.	Information Available	Information Presented	Consideration of: Site Identification, Notices (CLR: CLM Act 1997 & PEO Act 1997), WorkCover DG Licenses, Council Records, Conservation Management Plan, Site Inspection, Site Photos, Historical Aerial Photos, Workplace Records, Imported Fill, Past Contamination Assessments, Interviews & Meetings with past & present site owners and/ or occupiers, including technical representative. Industrial processes considered where applicable. **Accuracy of Site History collected: Acceptable.**														Exec. Summary, Sections 1.1, 1.3, 2, 3.1, 3.2, 3.3, App B, C, L.	(B2) 3, 3.1, 3.2, 3.3, 3.4, 3.6	AGLM Data Room	Acceptable
Primary Laboratory Sample Numbers (SGS)	IA: >5 ha	Groundwaters	10	10	Nil	4	6	10	10	10	10	10	9	9	6	Nil	Sections 4.1, 7.1, 8.2, App. E, G, I.	(B2) 5.3, 5.5, 6.3, 6.4	-	Acceptable.
Primary Laboratory COC Batches Submitted (SGS)			2	2	Nil	2	1	2	2	2	2	2	2	2	1	Nil			-	Acceptable.
Subcontracting	NATA Accredited.	All NATA Accredited	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Yes	Yes	Yes	Nil			-	Sonic Food & Water reports (micro analyses).
Primary Laboratory NATA Accredited Methods (GW). SGS Syd. NATA Accred. No. 2562 (4354). Sonic Food & Water Testing Penrith Lab NATA Accred. No. (4034).	NATA Accredited.	All NATA Accredited	7.84.01 (7.66)	7.84.01 (7.66)	-	7.84.04 7.84.21 7.84.99	7.84.21	7.84.12	7.84.12	7.84.12	7.84.12	7.84.22	8.70.16	8.70.16	8.70.16	-	Sections 4.1, 10.2, 12.1, App. I.	(B2) 19.8, 19.9, (B3) 2.4, 3.2, 3.4.	NATA Tech. Notes 17 & 23	Acceptable, noting samples (T_1_ESMW01/2m & T_2_ESSB02/2m) tested as soil/ water leach reported as approximations. Water samples (T_ESMW08 & DUPGS151215) reported as approximations.
	Experienced lab Analysts	All NATA Signatory	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	App. E, G, I.			
	Lab Ref.	Records Presented	AN022/ AN318/ AN311/ AN312		-	AN433/AN434		AN433/AN434/AN410	AN083/ AN403			AN083/ AN420	AS4276.7 (2007)	AS4276.5 (2007)	AS4276.7 (2007)	-	Sections 4, 9, 12.1, App. I.	(B2) 19.5, 19.8.	-	Acceptable.
	Analytical Technique	Records Presented	ICP/MS, ICP/AES, CV-AAS		-	PT-GC/MS		PT-GC/MS	GC/FID			3xExt, GC/MS	MFM	MFM	MFM	-				Acceptable.
	Consistent (M, SS, units,)	Consistent	Yes	Yes	-	Yes		Yes	Yes			Yes	Yes	Yes	Yes	-			-	Acceptable.
	Applicable USEPA/ APHA Ref.	USEPA/ APHA Ref.	USEPA 6020A, APHA 3112/ 3500, 3030-B,E,		-	USEPA 5030B, 8020A, 8260,		USEPA 5030B, 8020A, 8260,	-			USEPA 8270D, 3500C	AS4276.7 (2007)	AS4276.5 (2007)	AS4276.7 (2007)	-			-	Acceptable.
Appropriate & Consistent Analytical Methods (SGS)	Appropriate Selectivity & LOR', NEPM / APHA Methods Preferred.	Yes	Yes	Yes	-	Yes	Yes	Yes	Yes			Yes	Yes	Yes	Yes	-		(B2) 8.2.4, 19.5, (B4) 3.2.1, 3.2.3,	-	Acceptable.
SGS Statement of Compliance with NEPM (B3 - method equivalence).		SGS Response	Refer to SGS Compliance Statement received by email (dated 12.01.16). In respect of the NEPM 1999 (revision 2013), the soil test-work methods applied are based upon methods listed in the 6, 7, 8 and 10 of this document and comply noting that determining if samples (by screening) require the low level extraction procedure for SVOC is not performed. Organic Methods: AN403, AN420 and AN433, Physical/Inorganic Methods: AN005, AN101, AN106, AN122, AN142, AN188, AN602.														-	(B2) 19.9,	-	Acceptable.
Potential SGS Method Limitations & Interferences		As Indicated	Nil	Nil	-	Nil	Nil	Nil	Yes, refer to SGS analytical method summary			Nil	Nil	Nil	Nil	-	App. I	(B2) 19.6,		Acceptable, noting standard analytical methods used.
Sample Analysis undertaken with Multiple Phases.	-	Nil	Nil	Nil	-	Nil	Nil	Nil	Nil			Nil	N/A	N/A	N/A	-	App. I	-	-	Acceptable.
Reported SGS LOR/ PQL's (ug/l)	Satisfy SAQP	Yes	0.05-5	0.05-5	-	0.5-100	0.5-1	40-50	60-450	500	500	0.01- 0.02	1 cfu/100ml	1 cfu/100ml	1 cfu/100ml	-	Sections 6.1, 6.2, App. I.	(B1) 6. Table C1 (GIL's), (B2) 19.6.	-	Acceptable.
Volume of Sample used in Sample Preparation (SGS)	As Indicated	As Indicated	N/A	10/25 mL for Totals	-	40ml			80ml				INP	INP	INP	-	App. I	-	-	Acceptable.
Volume of Reagent/ Solvent in Sample Preparation (SGS)	As Indicated	As Indicated	N/A	N/A	-	N/A	N/A	N/A	Final Vol. 10mL (DCM)				N/A	N/A	N/A	-	App. I	-	-	Acceptable.
Digestion/ Extraction Time (SGS)	As Indicated	As Indicated	N/A	N/A	-	N/A	N/A	N/A	N/A			N/A	INP	INP	INP	-	App. I	-	-	Acceptable.
SGS Sample Prep Cleanup Techniques	As Indicated	As Indicated	N/A	N/A	-	N/A	N/A	N/A	Nil			Nil	INP	INP	INP	-	App. I	-	-	Acceptable.

Site Auditor Requirements: DQI-PARCCS Criteria	DQI	DQI - Result Range	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01)*	DQI-PARCCS Findings, References & Review Notes.			
SGS MDL's reported (mg/l or ug/l)	-	Not Reported	Not reported, available upon request from the primary laboratory (periodically reviewed by NATA assessments).	App. I	-	SAQP	Acceptable.

Part A. Table-6 Continued (New Groundwater Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria		DQI	DQI - Range of Results	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*														DQI-PARCCS Findings, References & Review Notes.			
Groundwater Samples		-	-	Dissolved Metals (M10)	Total Metals (M10)	TOC	VOC's (incl. BTEX)	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (LL) (BaP TEQ)	Faecal coliforms	Total coliforms	E. coli	PFOS/ PFOA	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
Comparability & Sensivity	SGS Method Dilutions (LOR's NOT increased above GIL's)	LOR≤GIL	LOR>GIL	Raised LOR's >GIL's	Yes	-	DCM LOR raised > GIL	Yes	Yes	Yes	Yes	Yes	BaP LOR's >ADWG	INP	INP	INP	-	App. I	-	SAQP	Sample T_5_ESMW06 BaP LOR (0.01 ug/l) raised <0.02 ug/l due to matrix interference (TRH reported < LOR). Hg (D) LOR's raised < 0.0001 mg/l.
	Applied Criteria: ANZECC/ ARMCANZ 2000 (TV 95% & 99% (Hg, Se), NHMRC, 2008, 2011, CRC Care 2011.	LOR≤GIL	LOR's ≤ GIL's	0.06 ug/l 4 mg/l	N/A	-	0.3- 6500 ug/l	1-950 ug/l	0.02 ug/l	0.1 ug/l	0.1 ug/l	0.1 ug/l	BaP 0.01 ug/l, N 16 ug/l	INP	INP	INP	-	App. I	Vol. B3. B2 19.8, Vol 4. B3. 2.3.7, 3.2.3.2	SAQP	Acceptable
Precision	Primary Lab Dupl's. (CP): Client Parent Batch. (NCP): Non-Client Parent Batch.	(1/10 sample batch) default A/C 60%RPD.	(CP), Nil, <LOR, (NCP)	1x(CP) <LOR	1x(CP) <LOR	-	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	Nil	Nil	Nil	-	Sections 12.5, App. I	Vol.3. B2. 19.9, Vol.4. B3. 3.3.3	SAQP	Acceptable, noting COC batch sizes < 20 samples.
	Intra-lab Dupl's. (ILD) SGS (Sydney)	ILD/ ILS at 5% 100 %RPD if <5*LOR, 75%RPD if 5-10xLOR, 50%RPD if ≥10*LOR N/A	Nil, <LOR, 0-100 %RPD	2xILD's <LOR, 0-67 %RPD	2xILD's <LOR, 0-83 %RPD	Nil	1xILD <LOR	2xILD's <LOR	2xILD's <LOR	2xILD's <LOR, 0-69 %RPD	2xILD's <LOR, 0-17 %RPD	2xILD's <LOR	2xILD's <LOR, 0-100 %RPD	Nil	Nil	Nil	-	Sections 11.3, 11.4, App. I	Vol 3. B2. 5.4.2, 3.5.1, 3.5.3, 19.7, 19.8	SAQP	Acceptable, noting SE147182-1 (T5_ESMW05) PAH results <5-10xLOR except BaP (0.14/ 0.24ug/l) = 53%RPD. SE146247-1 (T6_SW01) Hg results 0.07/ 0.17ug/l 83%RPD.
	Inter-lab Dupl's. (ILS)ELS (Sydney)		Nil, <LOR, 0-100 %RPD	1xILS's <LOR, 0-100 %RPD	1xILS's <LOR, 0-86 %RPD	Nil	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR	2xILS's <LOR, 100 %RPD	Nil	Nil	Nil	-	Sections 11.3, 11.4, App. I	Vol 3. B2. 5.4.2, 3.5.2, 3.5.3, 19.7, 19.8	SAQP	Acceptable, noting PAH results <5-10xLOR, Cr(D) & Cr(T) reporting 100%RPD & 86 %RPD results <5-10xLOR.
	Additional Replicates		Nil	Nil	Nil	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-	App. I	As per ILD's & ILS's	-	Acceptable
Accuracy	Primary Lab MS (CP): Client Parent Batch. (NCP): Non-Client Parent Batch.	(1/20 Sample Batch) General: 70-130%R Phenols: 20-130%R SVOC's: 20-140%R	(CP), Nil, (NCP), 50-117 %R	2x(CP) 87-112 %R	2x(CP) 50-117 %R	-	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	(NCP)	Nil	Nil	Nil	-	Sections 12.7, App. I.	Vol.4. B3. 3.3.5	-	Acceptable, noting COC batch sizes < 20 samples.
	Primary Lab Organic Surrogate Spikes		S1: N/A, Nil, 83-127 %R	N/A	N/A	-	83-124 %R	99-127 %R		Nil			Nil	N/A	N/A	N/A	-	Sections 12.3, App. I.	Vol.4. B3. 3.3.6	-	Acceptable, noting no TRH nor secondary PAH %R.
			S2: N/A, Nil, 42-126 %R	N/A	N/A	-	73-126 %R	73-120 %R		Nil			42-80 %R	N/A	N/A	N/A	-				Acceptable, slightly low PAH %R.
			S3+: N/A, Nil, 71-128 %R	N/A	N/A	-	71-128 %R	71-126 %R		Nil			Nil	N/A	N/A	N/A	-				Acceptable, noting no TRH nor secondary PAH %R.
	Primary Lab Control Spikes (LCS)		62-135 %R	95-120 %R	99-110 %R	-	70-129 %R	89-105 %R	95-101 %R	85-133 %R	117-135%R	122-126%R	62-101 %R	N/A	N/A	N/A	-	Sections 12.4, App. I.	(B3) 3.3.4	-	Acceptable
	Primary Lab Method Blanks (MB)	<LOR per Process Batch.	<LOR, INP	<LOR	<LOR	-	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	INP	INP	INP	-	Sections 12.6, App. I.	(B3) 3.3.2	-	Acceptable
	Proficiency Testing Programs (last 3 ys)	Acceptable Results	Records from past 2 yrs	Yes	Yes	-	-	-	Yes	Yes	Yes	Yes	-	-	-	-	-	-	(B2) 19.8	Preliminary Lab. Audit	Acceptable, refer to laboratory records past 2 yrs provided.
PARCCS	Secondary Laboratory QA/QC Data NATA Accreditation No. 2901. Sonic Food & Water Testing Penrith Lab NATA Accred. No. (4034).	NATA Accredited.	All NATA Accredited	7.84.01 (7.66)	7.84.01 (7.66)	-	7.84.04 7.84.21 7.84.99	7.84.21	7.84.12	7.84.12	7.84.12	7.84.12	7.84.22	8.70.16	8.70.16	8.70.16	-	Sections 4, 9, 12.1, App. I.	As per Primary Lab	SAQP 3.1	Acceptable, noting secondary lab (ELS) sub-contracted micro to same lab that primary lab (SGS) sub-contracted (Sonic).
		Analytical Technique	Records Presented	ICP/MS, ICP/AES CV-AAS		-	PT-GC/MS		PT-GC/MS	GC/FID			3xExt, GC/MS	MFM	MFM	MFM	-				Acceptable
		As per Primary Lab	LOR/ PQL	0.05-5 ug/l	0.05-5 ug/l	-	1-10 ug/l	1-2 ug/l	10 ug/l	50 ug/l	100 ug/l	100 ug/l	0.01-0.02 ug/l	1 cfu/100ml	1 cfu/100ml	1 cfu/100ml	-				***Note-1,*** ADWG VOC's (VC 0.3 ug/l) below the reported LOR 10 ug/l.
			Preservation	Field Filtered 125ml Pl. (HNO_3)	125ml Pl. (HNO_3)	-	2x40ml VOA's (HCl)			1x500ml Glass Amber (Natural)				Sterile 150ml Plastic (Natural)			-				Acceptable.

			THT's	Prep. 5-9 days	Digest. 5-9 days	-	P&T 7-8 days	P&T 7-8 days	P&T 7-8 days	Ext. 7-9 days +0-2 days	Ext. 7-9 days +0-2 days	Ext. 7-9 days +0-2 days	Ext. 7-10 days +0-3 days	Prep. 9/10	Prep. 9/11	Prep. 9/12	-				TRH & PAH slightly exceeded recommended THT's. Insufficient sample (ELS 137753) M10(D) & M10(T).

Part A. Table-7 Continued (New Groundwater Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria		DQI	DQI - Range of Results	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*													DQI-PARCCS Findings, References & Review Notes.			
Groundwater Samples		-	-	Dissolved Metals (M10)	Total Metals (M10)	TOC	VOC's (incl. BTEX)	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (LL) (BaP TEQ)	Faecal coliforms	Total coliforms	E. coli	PFOS/ PFOA	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
PARCCS	Secondary Laboratory QA/QC Data NATA Accreditation No. 2901. Sonic Food & Water Testing Penrith Lab NATA Accred. No. (4034).	As per Primary Lab	Surrogates	N/A	N/A	-	98-102 %R	102-105 %R		67-128 %R			67-91 %R	N/A	N/A	N/A	-	Sections 4, 9, 12.1, App. I.	As per Primary Lab	SAQP 3.1,	Acceptable, noting marginal exceedance of TRH %R's.
				N/A	N/A	-	97-98 %R	97-98 %R		Nil			Nil	N/A	N/A	N/A	-				Acceptable, noting no secondary PAH %R's reported.
				N/A	N/A	-	96-98 %R	93-98 %R		Nil			Nil	N/A	N/A	N/A	-				
			Duplicates	Nil	Nil	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-				Acceptable, noting COC batches < 20 samples.
			MS	Nil	Nil	-	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	Nil	-				Acceptable, noting COC batches < 20 samples.
			LCS	88-103 %R	88-120 %R	-	75-116 %R	89-99 %R	92-98 %R	71-110 %R	77-95 %R	71-97 %R	70-121 %R	N/A	N/A	N/A	-				Acceptable.
			MB	<LOR	<LOR	-	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	<LOR	INP	INP	INP	-				Acceptable.
Representativeness	Appropriate Sample Design, Collection, Handling, Storage for specific Analytes	Compliant SRN & Preservation.	As Indicated.	Insufficient Sample for ILS (ELS 137753) M10(D) & M10(T)		-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Field QC not tested, incorrect bottles supplied to lab.			-	Sections 8.8, App. E, F, G, I.	Vol.3. B2. 8.2.4.4, 19.9, Vol.4. B3. 3.3.3	-	Acceptable, noting QC samples FB, Rinsate, TB not tested (non-sterile sample bottles used to collect water samples). No ILS M10 results.
	Appropriate Sample Preservation		All Samples Preserved Indicated.	Field Filtered 125ml Pl. (HNO_3)	125ml Pl. (HNO_3)	-	2x40ml VOA's ($Na_2S_2O_3$)			1x500ml Glass Amber (Natural)				Sterile 150ml Plastic (Natural)			-			SGS Preservation Chart SA001 (2014), APHA Table 1060:1, AS/NZS 5667.3: 2003	Acceptable, noting that Micro could not be managed for testing within THT's due to logistical constraints (Muswellbrook-Syd couriers).
	Recommended THT		THT Managed Indicated.	M9 6 mths, Hg 28 days	M9 6 mths, Hg 28 days	-	7 days (USEPA 14 days)			7 days			7 days	24 hrs	24 hrs	24 hrs	-	Sections 12.2, App. E, F, G, I.	Vol.3. B2. 5.4.2, 8.2.4, 19.7, 19.8.		
	COC & SRN: Receipt by Lab in Good Condition & Secure Custody.		Yes, noting Micro	Yes	Yes	-	Yes	Yes	Yes	Yes			Yes	No TB, RB, FB Micro (TC, FC, E.coli) tested - non-sterile sample bottles submitted to lab.			-	Sections 11.2, App. E, F, G, I.		-	Acceptable.
	Water Quality Parameters, Oil/ Water Interface Meters (calibrated field equipment).	Compliant Calibration.	Compliant Calibration.	Spot check of - Groundwater Well Sampling Data Form Records: Geotech Oil/ Water Interface (30m) Meters supplied by Airmet (S/N: 3983, 3978, 3913) calibrated 24.10.13, 29.11.13.														Sections 11.9, App. E, F, G, I.	As per ILD's & ILS's	-	Acceptable.
	Primary Lab - THT's. SGS B1: SE146247. S: 16-19.11.15.	All samples comply with NEPM (2013) & ANZECC (2000).	TRH, PAH's, Micro exceeded THT's	Prep. 24/11, 30/11	Digest 24/11, 30/11	-	P&T 16/11	P&T 16/11	P&T 16/11	Ext. 24/11 +1 day	Ext. 24/11 +1 day	Ext. 24/11 +1 day	Ext. 24/11 +1 day	Prep. 17/12 +1 day	Prep. 17/12 +1 day	Prep. 17/12 +1 day	-	Sections 11.9, App. E, F, G, I.	Vol.3. B2. 8.2.4, 19.7, 19.8.	-	**Note-2,** The recommended THT's for unpreserved TRH, PAH's were slightly exceeded. TC, FC, E. coli THT's were exceeded and should be treated as estimate data.
	Primary Lab - THT's. SGS B2: SE147182. S: 9-15.12.15.		TRH, PAH's, Micro exceeded THT's	Prep. 16-17/12	Digest 16-17/12	-	P&T 17/12	P&T 17/12	P&T 17/12	Ext. 17/12 +0-1 day	Ext. 17/12 +0-1 day	Ext. 17/12 +0-1 day	Ext. 17/12 +0-1 day	Prep. 17/12 +1 day	Prep. 17/12 +1 day	Prep. 17/12 +1 day	-			-	
	Trip Spikes (volatile analytes)	BTEX 70-130%R, 60-70%R discuss. <60%R discuss. Collect 1 per batch (day)	2xTS 77-114 %R	N/A	N/A	-	N/A	2xTS 77-114 %R	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	Sections 11.10, App. E, F, G, I.	Vol.3. B2. 19.8	-	Acceptable.
	Trip Blank (volatile analytes)	Collect 1 per sampling batch (day), result <LOR/ PQL.	<LOR, except (+)'ve Chloroform	N/A	N/A	-	1xTB <LOR +$CHCl_3$ 3.2 ug/l	1xTB <LOR	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	Sections 11.7, App. E, F, G, I.	Vol.3. B2. 19.7	-	Acceptable, noting positive chloroform in TB, Rinsate Blank & Field Blank (conc. range 2.5-3.2 ug/l).
	Background Samples (control sample)		N/A	N/A	N/A	-	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	-	N/A	Vol 2. B1. 2.4.5 (TRH), 2.5.7 (EIL), Vol.3. B2. 19.7, Vol.5. B4. 3.2.3	-	Acceptable, noting background samples integrated into primary sampling design as required by AGLM.

	Rinsate Blank/ Field Blank/ Blank (water rinse over/ through sampling equipment)		<LOR, except (+)'ve Chloroform, Nil micro.	1xRB/FB <LOR	1xRB/FB <LOR	-	2xRB/FB <LOR, +$CHCl_3$ 2.5-3.0 ug/l	Nil	2xRB/FB <LOR	2xRB/FB <LOR	2xRB/FB <LOR	2xRB/FB <LOR	2xRB/FB <LOR	Nil (non-sterile sample bottles submitted to lab)	-	Sections 11.6, App. E, F, G, I.	Vol.3. B2. 8.2. 4.3, 19.7	-	No rinsate blank collected B1: SE146247 (sampled 16-19.11.15). Positive chloroform in RB & FB (conc. range 2.5-3.0 ug/l). No micro samples.

Part A. Table-8 Continued (New Groundwater Data - Tomago).

Site Auditor Requirements: DQI-PARCCS Criteria	DQI	DQI - Range of Results	No of Samples per Primary Laboratory Analytical Method & Review Notes, except where Secondary Laboratory Samples Noted. *DQI (PARCCS) review is undertaken as a visual examination of the consultant report, field notes & records, NATA endorsed laboratory reports, COC's, SRN's and the SAQP (ES, June 2015, 15092RP01).*														DQI-PARCCS Findings, References & Review Notes.			
Groundwater Samples	-	-	Dissolved Metals (M10)	Total Metals (M10)	TOC	VOC's (incl. BTEX)	BTEX	vTRH $C_{6-9/10}$ (F1)	TRH C_{10-36} (F2)	TRH $>C_{16-34}$ (F3)	TRH $>C_{34-40}$ (F4)	PAH's (LL) (BaP TEQ)	Faecal coliforms	Total coliforms	E. coli	PFOS/ PFOA	**Environmental Strategies Report Ref.**	**NEPM 1999**(R1. 2013) Ref.	**Suppl. Ref.**	**Environmental Strategies Findings**
Completeness	Appropriate Field Sampling Procedures, Sample Documentation & Descriptions Completed	All Samples.	All Samples Comply	Yes	Yes	-	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	-	Sections 8.1, 8.2, 8.3, 8.4, 8.5, 8.7, App. E, F, G, H, I, K.	Vol.3. B2. 7.3, 8.2.2, 8.2.3, 8.2.4, 8.2.4.3, 8.2.4.4, 8.2.5, 19.7	AS5667.1: 1998	Acceptable, refer to the Internal Audit (field sampling) conducted by ES.
	All Critical Samples Collected/ Analysed According to Site History, CSM Data Gaps, COC/ SAQP, and Compared to the Criteria.	All Samples.	All Samples Comply	The Completeness of Sampling Relative to the SAQP was considered to have been achieved as there were no sampling locations that were abandoned, restricted due to OHS/ disruption to site operations, or otherwise resulting in a recorded SAQP deviation. In addition, the selection of sampling locations as per the SAQP was conducted and effected by appropriately qualified and experienced field samplers under the supervision of the field supervisor, and ES Project Director. There were no significant laboratory QA/QC non-compliances noted. Note two of the ten GWMW locations were dry and therefore do not represent an incomplete data set.														Sections 4, 7, 8, 10, 11, 12, App. E, F, G, I.			Acceptable.

Key:

- Acceptable, complies with the DQI-PARCCS criteria.
- Minor DQI-PARCCS Non-compliance, or otherwise noteworthy Review Finding, requiring professional judgement by the authorised and responsible Site Auditor.
- Not Acceptable, does not comply with an individual DQI-PARCCS criteria.

INP: Supplementary Information Not Provided by the data source provider, N/A: Not Applicable.

DQI-PARCCS Findings and Review Notes have been compiled from the spot audit of the following laboratory reports (including associated COC's & SRN's): primary laboratory (SGS Sydney) and secondary laboratory (ELS Sydney).
- laboratory certificates were reviewed according to the NEPM 1999 (Amendment 2013) PARCCS criteria after being received from AGLM.

1. SGS (primary waters): SE146247, SE147182.
2. ELS (secondary waters): 137909, 137753, 139043.

Notes - Additional Detailed Auditor Comments relating to Field and Laboratory QA/QC Not Satisfying DQI-PARCCS (listed herein).

1. The secondary laboratory vinyl chloride LOR (10ug/l) in groundwater samples were reported above the criteria (ADWG 0.3 ug/l).

2. The following technical holding time breaches were noted:

   i) Unpreserved SVOC's (TRH, PAH's) were slightly exceeded and may be used as quality data as per the NEPM 1999 (2013 Amendment).

   ii) Total coliforms, Feacal coliforms, E. coli THT's were exceeded and should be treated as estimate data, or rejected.

3. Groundwater sampling was confirmed by an internal field audit of sampling activities conducted by Environmental Strategies, including various days of sampling activity witnessed by the AGLM technical advisor/ delegate as follows:

   i) New groundwater monitoring well locations were determined using professional judgement by a senior ES scientist/engineer during a Site Walkover inspection and in consideration of the results reported by the previous assessment reports (ERM). The locations were marked on the surface of the ground using paint to indicate the bore or test pit number and either a wooden or plastic stake driven into the ground in non-operational areas or a suitable marker (e.g. a coloured witch's hat) in operational areas, as required by the relevant site safety officer.

   Construction methods & materials used to establish the soil bores extending to a maximum depth of 6 m below surface level and converted into groundwater monitoring wells consisted of screens comprising 50 mm ID, Class 18, threaded, flush jointed uPVC with machine slots of 0.5 mm width. Casing for the wells comprised 50 mm ID, Class 18, threaded, flush jointed uPVC. Screen and casing was joined using Viton™ O-rings which were chemically resistant to petroleum hydrocarbons and chlorinated solvents. Screened sections of monitoring wells were constructed above and below the groundwater level to enable any light non-aqueous phase liquids (LNAPL), if present, to enter the monitoring well. Confined conditions encountered (where the static water level was found to be above the depth of water entry) consideration was given to inserting shorter screens as the behaviour of LNAPL in confined groundwater is often different from unconfined groundwater, and can lead to different design considerations. Refer to bore logs for monitoring wells exhibiting unconfined conditions. The void was gravel packed with 1-2mm of washed graded gravel to approximately 0.5m above the top of the screen interval. This was followed by a cement/bentonite seal installed above the gravel pack to just below the ground surface. Groundwater monitoring wells, top of casing, was surveyed using a differential GPS relative to Australia Map Grid (AMG) and elevations was relative to Australian Height Datum (AHD).

   Well development and groundwater sampling methods and standards set out in guidance documents were adopted for the groundwater development and sampling. The guidance documents were as follows:

   - NSW DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination;
   - VIC EPA (2006) Publication 668, Hydrogeological Assessment (Groundwater Quality) Guidelines; and
   - VIC EPA (2000) Publication 669, Groundwater Sampling Guidelines.

Development of the newly-installed monitoring wells were conducted using a combination of stainless steel bailer and a 12 v submersible pump. The stainless steel bailer and pump were cleaned with a Decon 90 wash mixture and rinsed with potable water between each monitoring well. Each well was developed until the majority of sedimentwas removed to ensure a good connection between the screened borehole interval and the surrounding aquifer. Well development typically occurred within 48 hours of each monitoring well installation. Sampling from wells occurred within a minimum of 5 days following development.

Prior to sampling, and following removal of the well cap, the headspace of each well (including the existing ERM monitoring wells) was immediately screened with a calibrated PID to determine the likely presence, or otherwise, of volatile organic compounds. The PID was calibrated at the start and end of each day of use. Following well headspace screening, all wells were gauged with an interface water level meter to determine depth to water below top of casing and the presence, or otherwise, of LNAPL or dense non aqueous phase liquids (DNAPL).Where the interphase meter detected either LNAPL or DNAPL, the thickness was recorded and the presence confirmed with a dedicated Teflon lined clear bailer.

Prior to collection of samples, all monitoring wells were purged using a low-flow technique (either a peristaltic pump or micro-purge pump and controller). Monitoring wells were purged at a flow rate between 0.1 - 0.5 L/min to minimise the suspended solids within the purge water, noting that this is dependent on site-specific hydrogeology. A purge rate that minimises drawdown (<0.1m) within the well was adopted and continued until the groundwater parameters (dissolved oxygen, pH, temperature, electrical conductivity and redox) had stabilised to within approximately 10% over three consecutive readings (pH +/-0.1, temperature +/-10%, electrical conductivity +/-3%, dissolved oxygen +/-10%, and redox +/-10%). Physical indicators such as the presence (and percentage) of suspended solids, colour, the presence/absence and nature of odours and the presence/absence of slicks or sheens on purge water were recorded on all field sheets by field samplers. Dedicated Teflon lined LDPE tubing was used at each monitoring well, and remained in each monitoring well following sampling. The interface probe was thoroughly decontaminated between gauging events with a phosphate free detergent (Decon 90) and rinsed with potable water. Low-flow sampling equipment was used to fill the appropriately preserved laboratory prepared sample containers with groundwater extracted from each well. For additional sample integrity, disposable nitrile gloves were replaced between each sampling location.

ii) Surface water sampling (in areas other than Lake Liddell) was collected using an extension pole with a Teflon cup (i.e dip sampler), where applicable. The water for collection was collected at a consistent depth of approximately 300mm below the water surface at each location. The surface water collected via the dip sampler was then carefully transferred to appropriately preserved laboratory prepared sample containers. All sample containers were completely filled to eliminate headspace and minimise the loss of volatile compounds. The samples for metals were submitted as both filtered through a 45 µm cellulose filter and non-filtered for analysis. The surface water parameters (dissolved oxygen, pH, temperature, electrical conductivity, redox and turbidity) were recorded during sample collection. The dip sampler cup was thoroughly decontaminated between sampling location with a phosphate-free detergent (Decon 90) and rinsed with potable water. For additional sample integrity, the disposable nitrile gloves were replaced between each sampling location. As soon as practicable after collection, samples were labelled and placed on ice in an insulated container that is to be stored in a secure location and chain-of-custody documentation was completed.

END OF REVIEW FINDINGS - Part A (Tables 5-8).

S450 Workbook Ref. #7: RN0160: 2014/2015.

END OF REPORT REVIEW FINDINGS.

PLEASE READ THIS NOTICE: (Disclaimer) All final field sampling records, NATA endorsed laboratory results, including laboratory COC's, laboratory SRN's, and laboratory QA/QC, issued or supplied shall be deemed to be complete, correct and reliable at time of issue and that this 'snap-shot' audit review (reviewer) assumes no liability or damages for any assessment undertaken where laboratory results require re-issue or amendment at any time for any reason. In addition, a snap-shot review of project DQI's means that the review and documentation shall record compliance to the SAQP and applicable guidelines within the constraints of allotted DQI review schedule and budget, and shall specifically mean that the DQI-PARCCS review should not be considered to be a complete compliance comparison of all DQI's produced. All laboratory methods and samples selected for laboratory analysis by others are conducted to conform to the authorised SAQP scope and budget. The QA/QC data table compilation and associated explanatory text shall relate specifically to the sample results for environmental samples as received for laboratory analysis, and may only provide an indication of sample data quality of sample specimens received by the laboratory for analytical testing. This checklist does not include any assessment or evaluation of laboratory chromatograms, mathematical sample result calculations, conversion factors where applicable, nor actual procedural observations performed by any laboratory, unless specifically stated. Opinions and judgements expressed herein are based on an understanding of current laboratory guidelines and should not be construed as legal opinion. The material contained within this document is confidential and privileged communication in contemplation of litigation for the sole use of the entity requesting the data quality review. This document may only be used, reproduced, or amended with the written permission of the author or the authorised Accredited Site Auditor for the site under audit and/ or authorised third party review. Acceptance of this QA/QC data compilation table and associated explanatory text does not preclude any requirement for an additional/ further review(s), investigation(s) by an authorised NSW EPA accredited Site Auditor, when and wherever necessary. Review of analytical data for Waste Classification purposes only applies if requested and where a specific Waste Classification Report has been supplied for such analytical data review, subject to NSW POEO Act Section 144 AA.

DEFINITIONS.

1. NEPM DEFINITIONS: NEPM 1999 (Amendment 2013) Appendix C, Sub-section 19.6.

A. **Comparability**: the confidence expressed qualitatively that data maybe considered to be equivalent for each sampling & analytical event. DQI's include:

a) Same SOP used on each sampling & analytical event,
b) Experienced field sampling personnel following standardised SOP's,
c) Climate condition (temperature, rainfall, wind, etc) discussed (where relevant),
d) Consistent sample types collected (filtering, size fractions, collection methods, preservation, etc) according to SAQP,
e) Same laboratory and consistent analytical methods, PQL's/ LOR's employed for the duration of the investigation phase (justify, quantify if different),
f) Same field & analytical units of measurement.

B. **Precision**: a quantitative measure of the variability (or reproducibility) of data. DQI's include:

a) Appropriate SOP's coupled with the analysis of-

i) Laboratory sample duplicates (incl. RPD calculations),
ii) Intra-laboratory blind field duplicates (incl. RPD calculations),
iii) Inter-laboratory blind field duplicates (incl. RPD calculations). The identity of the check sample ID must not be compromised via a laboratory's LIMS network if the intra-lab & inter-lab duplicates are being determined by the same analytical group using separate accredited regional/ state facilities.
iv) High Sample heterogeneity in laboratory samples and duplicates impact confidence in data and may warrant additional sampling to increase confidence or detect hotspots (NEPM 2013 Appendix C Sub-section 19.6).

C. **Accuracy (Bias)**: a quantitative measure of the closeness of the reported data to the true value. DQI's include:

a) Appropriate SOP's coupled with the analysis of -

i) All samples are correctly identified by location, depth, type etc.)
ii) Field equipment calibration records,
iii) Trip, Field, and Rinsate blanks,
iv) Laboratory prepared volatile trip spikes (BTEX),
v) Laboratory method blanks (incorporates reagent blanks),
vi) Laboratory surrogate spikes,
vii) Laboratory matrix spikes,
viii) Laboratory CRM's,
ix) Laboratory LCS.

D. **Representativeness**: The confidence expressed qualitatively that data are representative of each media type present on the site under investigation. DQI's include:

a) Appropriate media sampled & analysed according to the SAQP,
b) All media identified in SAQP sampled,
c) Appropriate sample collection, handling, storage, and preservation (identification of invalid data such as field or lab records indicating that sample integrity may have been compromised),
d) Detection of field and laboratory artefacts (contamination blanks etc).
e) Identification of any possible anomalous results such as elevated levels that are unexpected given the CSM & field notes on sampling (indicating a possible labelling or laboratory error).

E. **Completeness**: a measure of the amount of usable data contributing to the entire data set. DQI's include:

a) All critical site locations sampled and analysed according to the SAQP,
b) All samples collected from grid and at depth,
c) Experienced field sampling personnel following standardised SOP's,
d) Technical Holding Times (THT's) compliant,
e) Appropriate methods & PQL's/ LOR's,
f) Field and Laboratory documentation correct, legible, & authorised by signature and date.
g) Incompleteness is influenced by: site access issues, damaged sample points, laboratory performance problems such as matrix interference & invalid THT's.

From USEPA EPA/ G-4 & EPA/ G-8.

F. **Sensitivity**: a measure of the rate of change (or incremental increase) in an instrument detection response compared to the incremental change in analyte concentration (ie. the slope of the calibration curve) and should not be confused with the LOD. A mean slope of with a high positive (ie. >1) or low negative linear value (ie. <-1) indicates that on average the method is highly sensitive. DQI's include:

a) Identify the lower limit of Detection (including MDL, DL, PQL/ LOR validation),
b) Slope of Calibration Curve using Reference Sample/ Standard,
c) Slope of Curve using Site Specific Sample Matrix, where several spiked samples containing various concentrations of the analyte of interest.

2. WASTE CLASSIFICATION DEFINITIONS

Review of analytical data for Waste Classification purposes only applies if requested and where a specific Waste Classification Report has been supplied for analytical data review. The NSW POEO Act, Section 144 AA, regarding false and misleading information about waste states that:

(1) A person who supplies information, or causes or permits information to be supplied, that is false or misleading in a material respect about waste to another person in the course of dealing with the waste is guilty of an offence.

A. CT1: maximum Contaminant concentration values without TCLP testing for Solid General Waste.
B. CT2: maximum Contaminant concentration values without TCLP testing for Restricted Solid Waste.
C. TCLP1 & SCC1 (used together): maximum concentration for TCLP & maximum specific contaminant concentration (General Solid Waste) when used together.
D. TCLP2 & SCC2 (used together): maximum concentration for TCLP & maximum specific contaminant concentration (Restricted Solid Waste) when used together.

E. General Solid Waste: $\leq$SCC1 & $\leq$TCLP1
F. Restricted Solid Waste: $\leq$SCC2 & $\leq$TCLP2
G. Hazardous Solid Waste: $\geq$SCC2 & $\geq$TCLP2

1 Introduction

This document provides a summary, and a statement on the quality of the following Field and Laboratory items (PARCCS):

- **P**recision;
- **A**ccuracy;
- **R**epresentativeness;
- **C**omparability;
- **C**ompleteness; and
- **S**ensitivity.

Refer to the Tables in **Appendix J** for further information.

2 PARCCS Analysis: Field Works

2.1 Field Precision

Standard operating procedures were followed during all sampling tasks as per the TDS SAQP.

2.1.1 Duplicate Frequency

Field duplicate and triplicate samples were collected at a rate of:

For this project, the following QA/QC samples for soils were collected:

- DUPJO101115 was a soil intra-laboratory duplicate of sample T_1_ESMW01_1.0
- DUPJO111115 was a soil intra-laboratory duplicate of sample T_2_ESMW02_0.5
- DUPJO181115 was a soil intra-laboratory duplicate of sample T_ESMW10_2.0
- DUPGS181115 was a soil intra-laboratory duplicate of sample T_SG01
- TRIPJO101115 was a soil inter-laboratory triplicate of sample T_1_ESMW01_1.0
- TRIPJO111115 was a soil inter-laboratory triplicate of sample T_2_ESMW02_0.5
- TRIPJO181115 was a soil inter-laboratory triplicate of sample T_ESMW10_2.0
- TRIPGS181115 was a soil inter-laboratory triplicate of sample T_SG01

QA/QC samples were collected at a rate of 6.4% for soil which satisfies the stated sampling frequency of ≥5%.

For this project, the following QA/QC samples for groundwater were collected:

- DUPGS091215 was a water intra-laboratory duplicate of sample T_5_ESMW06.
- DUPGS151215 was a water intra-laboratory duplicate of sample T_5_ESMW05.
- TRIPGS091215 was a water inter-laboratory triplicate of sample T_5_ESMW06.
- TRIPGS151215 was a water inter-laboratory triplicate of sample T_5_ESMW05.

QA/QC samples were collected at a rate of 25% for groundwater which satisfies the stated sampling frequency of ≥5%.

Surface water QA/QC samples were collected as follows:

- DUPGS161115b was a water intra-laboratory duplicate of sample T_6_SW01.
- TRIPGS161115b was a water inter-laboratory triplicate of sample T_6_SW01.

QA/QC samples were collected at a rate of 50% for surface water which satisfies the stated sampling frequency of ≥5%.

Sediment QA/QC samples were collected as follows:

- DUPGS161115 was a sediment intra-laboratory duplicate of sample T_6_SD01.

QA/QC samples were collected at a rate of 100% for sediment which satisfies the stated sampling frequency of 100%.

2.1.2 Statement of Field Precision

ES considers the precision of the field investigation to be reliable for the purposes of the investigation, and have relied on the precision of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

2.2 Field Accuracy

Standard operating procedures were followed during all sampling tasks as per the TDS SAQP.

2.2.1 Field Blank Results

One (1) field blank (FBGS101215) was collected as part of the groundwater investigation. Field blanks are collected by opening the deionised water-filled sample containers in parallel to a sampling event to ensure environmental conditions are not contributing to potential contamination.

All results provided non-detects, with the exception of:

- Chloroform.

2.2.2 Rinsate Sample Results

One (1) rinsate sample (RINGS101215) was collected as part of the groundwater investigation. Rinsate samples were collected by running deionised water through/over the operational equipment used to collect the sample. This is to ensure the equipment is not contaminated and reusable equipment has been properly decontaminated.

All results provided non-detects, with the exception of:

Chloroform

2.2.3 Trip Blank Results

The following Trip Blanks were analysed as part of TDS APECS:

- Two (2) laboratory prepared soil Trip Blanks (Tripblank 10/11/2015 and Trip Blank 16/11/2015);
- Two (2) laboratory prepared water Trip Blanks (Trip Blank 16/11/2015 and TRIP BLANK 13/12/2015); and
- One (1) field prepared Trip Blank (TBGS101215).

Trip Blanks were collected and analysed to determine if cross contamination during sample collection and transport integrity has occurred.

All laboratory prepared Trip Blanks reported concentrations of analytes below the LOR. The field prepared Trip Blank (TBGS101215) reported a detection of Chloroform above the LOR.

2.2.4 Discussion of Rinsate and Blank Chloroform Detections

Chloroform was detected in the following samples prepared in the field by ES Environmental Scientist Greg Sheehan on the 10th December 2015:

- Field Blank: FBGS101215 (3.0 µg/L);
- Rinsate: RINGS101215 (2.5 µg/L); and
- Trip BlankTBGS101215 (3.2 µg/L).

All three if the above samples in which chloroform was detected were prepared from the same batch of deionised water. No potential source of chloroform was noted during the field process.

The water used for the field blank was supplied by the primary laboratory, SGS as were the containers used to return the sample to the laboratory. No other chlorinated compounds were detected, nor were any of the targeted CoPC detected.

ES considers the chloroform detection is possibly associated with denaturing of laboratory supplied plastic bottles in which laboratory supplied rinsate water was held.

As the targeted CoPC were not detected in the samples and chloroform was not part of the targeted suite, it is considered that the presence of chloroform in these samples has not adversely impacted the integrity of the data set used by ES as part of the TDS APECS.

2.2.5 Statement of Field Accuracy

ES considers the accuracy of the field investigation to be reliable and without biasand have relied on the accuracy of the filed investigation when making conclusions pertaining to the objectives of the TDS APECS.

2.3 Field Representativeness

Standard operating procedures were followed during all sampling tasks as per the TDS SAQP.

2.3.1 Appropriate Media Collected

All media, with the exception of two out of 10 groundwater monitoring wells were collected as per the TDS SAQP. Two of the groundwater monitoring wells (T_2_ESMW02 and T_3_ESMW03) did not encounter groundwater.

2.3.2 Sample Homogeneity

No soil samples were split during this investigation for the purposes of obtaining duplicates. Due to the CoPCs being targeted and potential loss of volatiles, duplicate samples were not mixed and separated, but replicate samples were collected. This technique has the disadvantage of the duplicate results potentially having high RPDs as a result of sample heterogeneity, however it significantly reduces the potential for the loss of volatile compounds during sampling.

2.3.3 Chain of Custody Details

Soil samples were transported to the laboratory under a CoC. Information on the CoC included the sampler, sample identifier, sample matrix, collection date, analyses to be performed, sample preservation method, sample release date and sample received date. CoCs are provided in **Appendix I** along with the laboratory Certificates of Analyses.

2.3.4 Rinsate Sample Results

One (1) rinsate sample (RINGS101215) was collected as part of the groundwater investigation. Rinsate samples were collected by running deionised water through/over the operational equipment used to collect the sample. This is to ensure the equipment is not contaminated and reusable equipment has been properly decontaminated.

All results provided non-detects, with the exception of:

Chloroform

The rinsate sample above in which chloroform was detected was prepared from the same batch of deionised water as were the blank samples in which chloroform was also detected. No potential source of chloroform was noted during the field process. The water used for the rinsate sample was supplied by the primary laboratory, SGS as were the containers used to return the sample to the laboratory. No other chlorinated compounds were detected, nor were any of the targeted CoPC detected. ES considers the chloroform detection is most likely from chloroform being present in the blank water when supplied by the laboratory.

As the targeted CoPCs were not detected in the samples and chloroform was not part of the targeted suite, it is not considered that the presence of chloroform in the field blank has adversely impacted the integrity of the data set used by ES as part of the TDS APECS.

2.3.5 Statement of Field Representativeness

ES considers the representativeness of the field investigation to be reliable and without bias and have relied on the representativeness of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

2.4 Field Comparability

ES considered the following items to determine if the data may be considered to be equivalent for each sampling and analytical event:

- Same Standard Operating Procedures (SOPs)used;
- Experienced Samplers completing sampling;
- Climatic conditions were consistent; and
- Consistent types of samples collected.

The ES SOPs and the TDS SAQP were used by each staff member throughout the TDS APECS.

The samplers completing works on the site were experienced in sampling of the relevant matrices for the TDS APECS.

Records from the Bureau of Meteorology indicate that weather conditions were not considered likely to have caused sampling bias on the dates of soil, sediment, water sampling, due to the sampling collection and handling techniques employed.

Consistent sampling equipment including laboratory supplied bottles and jars were used during the sampling.

All groundwater samples were field filtered for dissolved metal analysis.

ES is confident in the comparability of the data collected during the field investigation.

2.4.1 Statement of Field Comparability

ES considers the comparability of the field investigation to be reliable and without bias and have relied on the comparability of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

2.5 Field Completeness

ES considered the following items to determine the amount of useable data from the investigation:

- All locations sampled;
- All samples collected;
- SOPs appropriate and complied with experienced sampler; and
- Documentation correct.

With the exception of two groundwater monitoring wells which did not encounter groundwater, all samples as outlined in the TDS SAQP, were collected from the all AEC.

The ES SOPs and the TDS SAQP were used by each staff member throughout the TDS APECS.

The samplers completing works on the site were experienced in sampling of the relevant matrices for the TDS APECS.

2.5.1 Statement of Field Completeness

ES considers the completeness of the field investigation to be reliable and without bias and have relied on the completeness of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

2.6 Field Sensitivity

Standard operating procedures were followed during all sampling tasks as per the TDS SAQP.

2.6.1 Sample Preservation

A review of the laboratory sample receipt notifications indicate that appropriate preservation of samples was completed. Sample receipt notifications are provided in **Appendix I** along with the laboratory Certificates of Analyses.

Therefore, ES considers the sensitivity of the field investigation to be reliable for the purposes of the investigation.

2.6.2 Statement of Field Sensitivity

ES considers the sensitivity of the field investigation to be reliable and without bias and have relied on the sensitivity of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

3 Field PARCCS Compliance

Based on the discussion provided above ES considers the QA/QC of the field investigation as assessed against the PARCCS parameters, to be reliable and without bias and have relied on the QA/QC of the field investigation when making conclusions pertaining to the objectives of the TDS APECS.

4 PARCCS Analysis: Laboratory

4.1 Laboratory Precision

To determine the Laboratory precision, the following works were completed:

- Collection of intra and inter-laboratory duplicates by ES; -
- Analysis of intra and inter-laboratory duplicates by the primary and secondary laboratories;
- Supply of volatile trip spike by the primary laboratory;
- Storage and transportation of Trip Spikes with primary laboratory samples by ES;
- Laboratory analysis of Trip Spikes; and
- Laboratory analysis of duplicate samples.

As stated in **Section12.9** of the Phase 2 ESA, the RPD between primary and intra or inter-laboratory duplicates were within acceptable ranges with the exception of the heterogeneous nature of samples. Overall, there is an acceptable level of agreement between the parent sample and duplicate/triplicate samples. This indicates field procedures practiced by ES staff were adequate in obtaining representative samples.

As reported in the PARCCs review tables in **Appendix J** all Precision items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Primary Laboratory Duplicate (Soil and Sediment)	Six Client Parent Batch Laboratory Duplicates exceeded the 0- 60% RPD for PAHs.	ES considers these samples to be of acceptable quality, noting that the RPD are only marginally outside of the range of 0-60% and samples were obtained in soil as replicates and not split in the field.
Intra-laboratory Duplicates (Soil and Sediment)	NOTE 2: The intra-duplicate variability was noted as follows: i) Sample T2_ESMW02 0.5 sampled 10.11.15 (SGS Report SE145989) reported: a) Metals: Copper concentration of 0.9mg/kg & 2.9mg/kg (LOR 0.5mg/kg) producing 105 %RPD, b) Metals: Chromium concentration of 36mg/kg & 15mg/kg (LOR 0.3mg/kg) producing 82 %RPD, c) Metals: Zinc concentration of 9.2mg/kg & 21mg/kg (LOR 0.5mg/kg) producing 78 %RPD	As discussed in **Section 11.3** of the Phase 2 ESA, samples were not mixed and separated to avoid the potential loss of volatiles. Thereby potentially giving rise to increase in RPD between primary and duplicate samples. These exceedances in RPDs for soil in were below the adopted SAC guidelines and mostly likely attributed to the non-homogenous nature of the samples.

Data Quality Indicator	Finding	Discussion
Inter-laboratory Duplicates (Soil and Sediment)	NOTE 3 The intra-duplicate variability was noted as follows: ii) Sample T_ESMW10-1 sampled 18.11.15 (SGS Report SE146247) reported: a) Metals: Zinc concentration of 1.4mg/kg & 3mg/kg (LOR 0.5mg/kg) producing 73 %RPD	As discussed in **Section 11.3** of the Phase 2 ESA, samples were not mixed and separated to avoid the potential loss of volatiles. Thereby potentially giving rise to increase in RPD between primary and duplicate samples. This exceedance in RPDs for soil was below the adopted SAC guidelines and mostly likely attributed to the non-homogenous nature of the samples.
Additional Replicates (Soil and Sediment)	Additional asbestos replicate samples	ES considers this to be acceptable, noting Asbestos samples 1,3,5,7,9,11,14-20 were ashed after initial Stereo Microscope Examination, re-examined and trace analysis performed on samples where asbestos has not been detected.
Intra-laboratory Duplicates (Groundwater and Surface Water)	Two intra-laboratory samples reported RPD outside acceptable ranges for dissolved and total metals, TRH C_{10}-C_{36}, and PAH (BaP TEQ). ▪ SE147182-1 (T5_ESMW05) PAH results <5-10xLOR except BaP (0.14/ 0.24ug/l) = 53%RPD. ▪ SE146247-1 (T6_SW01) Hg results 0.07/0.17ug/l 83%RPD.	ES considers these results to be of acceptable quality and likely the result of heterogeneity between samples.
Inter-laboratory Duplicates (Groundwater and Surface Water)	One inter-laboratory sample reported RPD outside acceptable ranges for dissolved and total metals, and PAH (BaP TEQ). ▪ PAH results <5-10xLOR; ▪ Cr(D) & Cr(T) reporting 100%RPD & 86 %RPD results <5-10xLOR.	This is consistent with the Inter laboratory results and considered by ES to be likely the result of heterogeneity between samples.

4.1.1 Statement of Laboratory Precision

ES considers the precision of the laboratory analyses to be reliable and without bias and have relied on the precision of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

4.2 Laboratory Accuracy

To determine the Laboratory Accuracy, the following works were completed:

- Analysis of primary laboratory supplied and ES produced Trip Blanks;
- Analysis of Rinsate Blank samples;
- Analysis of reagent blanks
- Analysis of method blanks
- Analysis of matrix spikes
- Analysis of matrix spike duplicates
- Analysis of surrogate spikes
- Analysis of reference materials
- Analysis of laboratory control samples
- Analysis of laboratory-prepared spikes

As reported in the PARCCs review tables in **Appendix J** all Accuracy items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Primary Laboratory Matrix Spike (Soil and Sediment)	Five Total Metals samples, 1 BTEX sample, and three TRH C_6-C_{10} samples were outside the DQI percent recovery (%R) ranges.	ES considers the primary laboratory matrix spikes to be of acceptable quality.
Primary Laboratory Organic Surrogate Spikes(Soil and Sediment)	%R are within acceptable ranges with the exception of the following: ▪ S 1: TRH C_{10}-C_{36}– Nil%R ▪ S 2: OCP –Nil%R ▪ S 3: OCP & OPP Nil %R	ES considers the Laboratory Surrogate Spike %R results are of acceptable quality. ES considers that the %R findings of TRH C_{10}-C_{36}, OCP, and OPP outside of the DQI suggest that either variability in method sampling performance for these samples or potential loss of analyte has occurred prior to analysis. ES notes that no primary soil samples reported concentrations of OCP or OPP. Five samples reported concentrations of TRH C_{10}-C_{36} above the LOR.

Data Quality Indicator	Finding	Discussion
Primary Laboratory Control Sample (LCS) (Soil and Sediment)	%R are within acceptable ranges with the exception of the following: ▪ VOCs: 67-128 %R ▪ BTEX: 67-94 %R ▪ vTRH: 71-135 %R	ES considers the Primary LCS to be of acceptable quality, noting that the %R are only marginally outside of the range of 70-130%.
Primary Laboratory Matrix Spike (Groundwater and Surface Water)	Two Total Metals samples were outside the DQI percent recovery (%R) ranges.	ES considers the primary laboratory matrix spikes to be of acceptable quality noting that the CoC batch size was less than 20 samples.
Primary Laboratory Organic Surrogate Spikes(Groundwater and Surface Water)	%R are within acceptable ranges with the exception of the following: ▪ S 1: TRH C_{10}-C_{36}& PAHs–Nil %R ▪ S 2: PAHs - 42-80 %R ▪ S 3: PAHs Nil %R	ES considers the Laboratory Surrogate Spike %R results are of acceptable quality ES considers that the %R findings of TRH C_{10}-C_{36}, and PAHs outside of the DQI suggest that either variability in method sampling performance for these samples or potential loss of analyte has occurred prior to analysis.
Primary Laboratory Method Blanks (MB)(Groundwater and Surface Water)	All MB were reported to be below the LOR. Supplementary Information was not provided by the data source provider for Microbial results	ES considers the Primary MB to be of acceptable quality.

Data Quality Indicator	Finding	Discussion
Proficiency Testing Programs (3 years)	Laboratory proficiency testing were supplied for the past two years, not three.	The Laboratory proficiency testing documentation supplied was of acceptable quality for the past two years. Therefore, ES considers the proficiency testing to be acceptable.

4.2.1 Statement of Laboratory Accuracy

ES considers the accuracy of the laboratory analyses to be reliable and without bias. Based on the discussion provided, exceptions reported to the laboratory accuracy DQIs are not considered likely to have had a systemic impact on the overall accuracy of laboratory results. As a result, ES have relied on the accuracy of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

4.3 Laboratory Representativeness

To determine the Laboratory representativeness, the following items were assessed:

- Collection and analysis of all samples as per the SAQP (with the exception of two groundwater monitoring wells which did not encounter groundwater);
- Collection and analysis of rinsate samples; and
- If the frequency of laboratory blanks are acceptable and the results are within specified ranges.

As reported in the PARCCs review tables in **Appendix J** all Representativeness items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Appropriate Sample Design, Collection, Handling, Storage for specific Analytes (Groundwater and Surface Water)	▪ Insufficient Sample for ILS (ELS 137753) M10(D) & M10(T) ▪ Field QC not tested, incorrect bottles supplied to lab.	Inter-laboratory sample TRIPGS161115b was reported in ELS laboratory report 137753 as having insufficient sample for metal analysis as the preserved laboratory supplied metals bottles were not sent to the secondary laboratory. These bottles were mistakenly sent to the Primary Laboratory and noted on the CoC for SGS laboratory report SE146247. These samples were forwarded to Envirolab for analysis. As a result, the metals concentrations were for TRIPGS161115b were reported separately to the other CoPC. The metals samples were within holding time and under CoC. Microbial samples were not analysed by the secondary laboratory as holding times were unable to be achieved. Microbial analysis within the primary samples are considered by ES to be estimates only.
Rinsate Blank (water rinse over sampling equipment)	Rinsate blanks were not collected during the soil and sediment investigation.	No rinsate samples were submitted to the laboratory during the soil investigation. ES completed soil sampling as per the TDS SAQP, including the use of clean nitrile gloves to collect samples. ES considers that the risk

Data Quality Indicator	Finding	Discussion
		of cross contamination between sampling locations is low. One rinsate sample (RINGS101215) was collected during the surface water and groundwater sampling completed at the TDS. This rinsate sample reported a concentration of Chloroform of 2.5 µg/L. A field blank sample (FBGS101215) was collected on the 10th December 2015 using the same batch of de-ionised water used for the RINGS101215. This field blank sample reported the highest concentration of Chloroform (3.0 µg/L). As the source of Chloroform was not detected in any of the primary surface water and/ or sediment samples collected from TDS, and due to the detection within the field blank sample, it is likely that the source of Chloroform was from the laboratory supplied de-ionised water and not from sampling equipment.
Primary Lab - THT's: ▪ **SGS B1: SE146247. S: 16-19.11.15.** ▪ **SGS B2: SE147182. S: 9-15.12.15.**	THTs for TRH, PAH's and Microbial samples exceeded by the following: ▪ TRH: 0-1 day; ▪ PAH: 0-1 day; ▪ Microbial: 1 day	The recommended THT's for unpreserved TRH, PAH's were exceeded by 0-1 days. ES considers the TRH and PAH data to be of acceptable quality TC, FC, E. coli THT's were exceeded and should be treated as estimate data.

4.3.1 Statement of Laboratory Representativeness

ES considers the representativeness of the laboratory analyses to be reliable and without bias for the media analysed by the laboratory. Based on the discussion provided, exceptions reported to the laboratory representativeness DQIs are not considered likely to have had a systemic impact on the overall representativeness of laboratory results. As a result, ES have relied on the representativeness of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

4.4 Laboratory Comparability

To determine the comparability of Laboratory data, the following items were assessed:

- Consistent sample analytical methods used;
- Consistentsample PQLs;
- Consistent laboratories; and
- Consistent units.

As reported in the PARCCs review tables in **Appendix J**, all Comparability items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Primary Laboratory NATA Accredited **Methods**	Trace Asbestos Fibres (LOR 0.01 %w/w) not NATA as reported by SGS on final Certificate of Analysis.	The SGS laboratory response (email 12.01.16) was, *"The Fibre ID report that we have issued with each job is accredited, and features all the qualitative information on the analysis, while also not suffering the issue with the LOR being marked as non-accredited. Please note our accreditation is not changing, it is a matter of semantics as to why this was marked as non-accredited".* ES considers the Trace Asbestos Fibres results to be estimates only until such time as the results are NATA accredited.
	Primary laboratory Fluoride (soluble)and secondary laboratory Fluoride (total)Comparability	The SGS extraction of soils USEPA Mod. Ref. 3550 (medium/ high concentration method as default). No pre-screening for <20mg/kg low method. Fluoride (soluble) determined rather than Total Fluoride as per secondary lab results. ES considers the reported results to be comparable between the primary and secondary laboratories, total concentrations are likely to vary as a result of field methodology rather than analysis methods.

Data Quality Indicator	Finding	Discussion
Appropriate & Consistent Analytical Methods (including screening for low or med/high concentrations)	Primary laboratory Fluoride (soluble)and secondary laboratory Fluoride (total)Comparability	ES considers the Fluoride (soluble) method completed by the primary laboratory is appropriate.
Laboratory NEPM Statement of Compliance.	Laboratory NEPM Statement of Compliance.	Refer to SGS Compliance Statement received by email (dated 12.01.16): *"In respect of the NEPM 1999 (revision 2013), the soil test-work methods applied are based upon methods listed in the 6, 7, 8 and 10 of this document and comply noting that determining if samples (by screening) require the low level extraction procedure for SVOC is not performed.* *Organic Methods: AN403, AN420 and AN433, Physical/Inorganic Methods: AN005, AN101, AN106, AN122, AN142, AN188, AN602. Regarding sediment samples with high moisture, as per our national quality manager - LORs (and MU) have been determined through method validation and the confidence limit of 95% is valid with or without application of a moisture factor for high moisture samples. Applying a linear factor to the LOR for high moisture samples does not change the confidence limit."* ES considers the Laboratory NEPM Statement of Compliance is sufficient for the purposes of this investigation.
Extraneous Sample Wt. Material Removed	Nil reported under NATA accredited reporting comments, unknown if any extraneous material had been removed by the laboratory sample preparative steps	ES considers this to be acceptable for the purposes of this investigation.
Laboratory LOR/ PQL's (mg/kg)	Trace Asbestos Fibres (LOR 0.01 %w/w) not NATA as reported by SGS on final Certificate of Analysis.	The SGS laboratory response (email 12.01.16) was, *"The Fibre ID report that we have issued with each job is accredited, and features all the qualitative*

Data Quality Indicator	Finding	Discussion
		information on the analysis, while also not suffering the issue with the LOR being marked as non-accredited. Please note our accreditation is not changing, it is a matter of semantics as to why this was marked as non-accredited". ES considers the Trace Asbestos Fibres results to be estimates only until such time as the results are NATA accredited.
Primary Laboratory NATA Accredited Methods (GW). **SGS Syd. NATA Accredited No. 2562 (4354).** **Sonic Food & Water Testing Penrith Lab NATA Accredited. No. (4034).**	NATA Accredited for Microbial samples analysis.	ES considers this acceptable, noting samples (T_1_ESMW01/2m & T_2_ESSB02/2m) tested as soil/ water leach reported as approximations. Water samples (T_ESMW08 & DUPGS151215) reported as approximations.
Potential SGS Method Limitations & Interferences	Not reported by SGS for all analytes with the exceptions of TRH.	ES considers this to be acceptable, noting standard analytical methods used.
Volume of Sample used in Sample Preparation (SGS)	Supplementary Information Not Provided by the data source provider for the reported microbial samples.	This is considered by ES to be Acceptable.
Digestion/ Extraction Time (SGS)	Supplementary Information Not Provided by the data source provider for the reported microbial samples.	This is considered by ES to be Acceptable.
SGS Sample Preparation Cleanup Techniques	Supplementary Information Not Provided by the data source provider for the reported microbial samples.	This is considered by ES to be Acceptable.
SGS Method Dilutions (LOR's NOT increased above GIL's)	Dissolved metals, VOCs, and BaP LORs > GAC.	BaP collected from groundwater sampling location T_5_ESMW06, reportedly had a raised LOR from 0.01 µg/L to <0.02 µg/l due to matrix interference (TRH reported < LOR). Hg (D) LOR's raised < 0.0001 mg/L. ES conservatively considers samples with LOR > GAC to be

Data Quality Indicator	Finding	Discussion
		above the criteria for the purposes of this investigation.
Applied Criteria: ANZECC/ ARMCANZ 2000 (TV 95% & 99% (Hg, Se), NHMRC, 2008, 2011, CRC Care 2011	Supplementary Information Not Provided by the data source provider for the reported microbial samples.	This is considered by ES to be Acceptable.

4.4.1 Statement of Laboratory Comparability

ES considers the comparability of the laboratory analyses to be reliable and without bias for the media analysed by the laboratory. Based on the discussion provided, exceptions reported to the laboratory comparability DQIs are not considered likely to have had a systemic impact on the overall comparability of laboratory results. As a result, ES have relied on the comparability of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

4.5 Laboratory Completeness

To determine the completeness of Laboratory data, the following items were assessed:

- All samples analysed according to SAQP;
- All analytes analysed according to SAQP;
- Appropriate methods and PQLs;
- Sample documentation complete; and
- Sample holding times complied with.

As reported in the PARCCs review tables in **Appendix J,** all Completeness items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Appropriate Sampling, Sample Documentation & Descriptions Completed (Soils and Sediments)	Stockpile samples were sub sampled by the laboratory, placed into separate zip-lock bags.	ES notes that the primary laboratory states that: *"A portion of the sample supplied has been sub-sampled for asbestos according to SGS in-house procedures. We therefore cannot guarantee that the sub-sample is representative of the entire sample supplied…"* ES considers the sub-sampling of samples by the laboratory for analysis of asbestos provided an acceptable indicator of the presence or absence of asbestos in the samples analysed.

4.5.1 Statement of Laboratory Completeness

ES considers the completeness of the laboratory analyses to be reliable and without bias for the media analysed by the laboratory. Based on the discussion provided, exceptions reported to the laboratory completeness DQIs are not considered likely to have had a systemic impact on the overall completeness of laboratory results. As a result, ES have relied on the completeness of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

4.6 Laboratory Sensitivity

To determine the Laboratory sensitivity, the following works were completed:

- NATA accreditation of the laboratory for the analyses requested.
- Adoption of the appropriate analytical methodology.
- Appropriate detection levels requested to meet the requirements of the assessment criteria

As reported in the PARCCs review tables in **Appendix J**, all Accuracy items were deemed acceptable for soil, sediment, surface water and groundwater samples noting the following:

Data Quality Indicator	Finding	Discussion
Digestion/ Extraction Time	VOC, BTEX, OCP, PCBs ad OPP's reported a 1-hour Digestion/ Extraction Time	ES considers this to be acceptable, noting single extraction (medium/ high level method).
SGS Method Dilutions (LOR's NOT increased above GIL's)	Dissolved metals, VOCs, and BaP LORs > GAC.	BaP collected from groundwater sampling location T_5_ESMW06, reportedly had a raised LOR from 0.01 µg/L to <0.02 µg/l due to matrix interference (TRH reported < LOR). Hg (D) LOR's raised < 0.0001 mg/L. ES conservatively considers samples with LOR > GAC to be above the criteria for the purposes of this investigation.

Data Quality Indicator	Finding	Discussion
Applied Criteria: ANZECC/ ARMCANZ 2000 (TV 95% & 99% (Hg, Se), NHMRC, 2008, 2011, CRC Care 2011	Supplementary Information Not Provided by the data source provider for the reported microbial samples.	This is considered by ES to be Acceptable.

4.6.1 Statement of Laboratory Sensitivity

ES considers the sensitivity of the laboratory analyses to be reliable and without bias for the media analysed by the laboratory. Based on the discussion provided, exceptions reported to the laboratory sensitivity DQIs are not considered likely to have had a systemic impact on the overall sensitivity of laboratory results. As a result, ES have relied on the sensitivity of the laboratory data when making conclusions pertaining to the objectives of the TDS APECS.

5 Laboratory PARCCS Compliance

Based on the discussion provided above ES considers the QA/QC of the laboratory investigation as assessed against the PARCCS parameters, to be reliable and without bias and have relied on the QA/QC of the laboratory investigation when making conclusions pertaining to the objectives of the TDS APECS.

APPENDIX K– Calibration Certificates

Tiger PID
Calibration Booklet

Environmental Strategies
PROVIDING BENEFITS

Date: 10.11.15 Time: 0700 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 100.7 Personnel: Greg Sheehan Signed:	Date: 16.11.15 Time: 0650 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 100.3 Personnel: Greg Sheehan Signed:
Date: 17.11.15 Time: 0630 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 99.8 Personnel: Greg Sheehan Signed:	Date: 18.11.15 Time: 0631 Project No: AGLM Tomago Project Name: 15107 **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 100.1 Personnel: Greg Sheehan Signed:
Date: 19.11.15 Time: 0640 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 99.9 Personnel: Greg Sheehan Signed:	Date: 9.12.15 Time: 0615 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 101.2 Personnel: Greg Sheehan Signed:
Date: 10.12.15 Time: 0620 Project No: 15107 Project Name: AGLM Tomago **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** 0 **Gas Reading after Calibation:** 100.5 Personnel: Greg Sheehan Signed:	Date: Time: Project No: Project Name: **Calibration Gas:** Isobutylene **Calibrated to:** 100ppm **Air Reading:** **Gas Reading after Calibation:** Personnel: Signed:

EnvironmentalStrategies
PROVIDING BENEFITS

YSI Professional Plus
Calibration Booklet

Project Name: *AGLM*
Project Number: ~~15104 + 15105~~ 15107

Date: 16.11.15	Time: 0605		Date: 17.11.15	Time: 0645	
pH	Buffer 1: 4 *pH 4*	Buffer 2: 6.98 *pH 7*	**pH**	Buffer 1: *pH 4*	Buffer 2: *pH 7*
Reading: 4.00		Pass Fail	Reading: 4.0 / 7.0		Pass Fail
Cond.	Temp: 22.0	2760 µS/cm @25°C	**Cond.**	Temp: 22.1	2760 µS/cm @25°C
Reading 2258		Pass Fail	Reading 2270		Pass Fail
DO:	*Sodium Sulphite for Zero DO2 (2g/100mL)*		**DO:**	*Sodium Sulphite for Zero DO2 (2g/100mL)*	
Reading: 0.0		Pass Fail	Reading: 0.0		Pass Fail
ORP	Temp: 22.7	Zobel Reagent A&B	**ORP**	Temp: 22.3	Zobel Reagent A&B
Reading: 232.5		Pass Fail	Reading: 230.0		Pass Fail
Personnel: Greg Sheehan			Personnel: Greg Sheehan		
Signed:			Signed:		
Date: 9.12.15	Time: 0630		Date: 10.12.15	Time: 0700	
pH	Buffer 1: *pH 4*	Buffer 2: *pH 7*	**pH**	Buffer 1: *pH 4*	Buffer 2: *pH 7*
Reading: 4.0 / 7.0		Pass Fail	Reading: 4.0 / 7.0		Pass Fail
Cond.	Temp: 20.1	2760 µS/cm @25°C	**Cond.**	Temp: 20.5	2760 µS/cm @25°C
Reading 2490		Pass Fail	Reading 2470		Pass Fail
DO:	*Sodium Sulphite for Zero DO2 (2g/100mL)*		**DO:**	*Sodium Sulphite for Zero DO2 (2g/100mL)*	
Reading: 0.0		Pass Fail	Reading: 0.0		Pass Fail
ORP	Temp: 20.0	Zobel Reagent A&B	**ORP**	Temp: 20.1	Zobel Reagent A&B
Reading: 235		Pass Fail	Reading: 250.5		Pass Fail
Personnel: Greg Sheehan			Personnel: Greg Sheehan		
Signed:			Signed:		
Date: 15.12.15	Time: 0650		Date:	Time:	
pH	Buffer 1: *pH 4*	Buffer 2: *pH 7*	**pH**	Buffer 1: *pH 4*	Buffer 2: *pH 7*
Reading: 4.0 / 7.0		Pass Fail	Reading:		Pass Fail
Cond.	Temp: 20.0	2760 µS/cm @25°C	**Cond.**	Temp:	2760 µS/cm @25°C
Reading 2487		Pass Fail	Reading		Pass Fail
DO:	*Sodium Sulphite for Zero DO2 (2g/100mL)*		**DO:**	*Sodium Sulphite for Zero DO2 (2g/100mL)*	
Reading: 0.0		Pass Fail	Reading:		Pass Fail
ORP	Temp: 20.1	Zobel Reagent A&B	**ORP**	Temp:	Zobel Reagent A&B
Reading: 249.5		Pass Fail	Reading:		Pass Fail
Personnel: Greg Sheehan			Personnel:		
Signed:			Signed:		
Date:	Time:		Date:	Time:	
pH	Buffer 1: *pH 4*	Buffer 2: *pH 7*	**pH**	Buffer 1: *pH 4*	Buffer 2: *pH 7*
Reading:		Pass Fail	Reading:		Pass Fail
Cond.	Temp:	2760 µS/cm @25°C	**Cond.**	Temp:	2760 µS/cm @25°C
Reading		Pass Fail	Reading		Pass Fail
DO:	*Sodium Sulphite for Zero DO2 (2g/100mL)*		**DO:**	*Sodium Sulphite for Zero DO2 (2g/100mL)*	
Reading:		Pass Fail	Reading:		Pass Fail
ORP	Temp:	Zobel Reagent A&B	**ORP**	Temp:	Zobel Reagent A&B
Reading:		Pass Fail	Reading:		Pass Fail
Personnel:			Personnel:		
Signed:			Signed:		

Instructions:
Please fill in all blank items.
Circle either Pass or Fail based on the YSI response.

APPENDIX L – ES SAQP November 2015

EnvironmentalStrategies
PROVIDING BENEFITS

Sampling, Analysis and Quality Plan

Tomago Development Site
15107RP02_Tomago_SAQP

Privileged and Confidential: prepared for the purposes of legal advice

Prepared for AGL Macquarie | November 2015

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Signed: Craig Wellings Project Manager	
Signed Rod Harwood Project Director	

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1 Introduction

Environmental Strategies Pty Ltd (ES) was commissioned by AGL Macquarie (AGLM) to prepare this Sampling, Analysis and Quality Plan (SAQP) for a Stage 2 Detailed Site Investigation to be completed at the Tomago Development Site (1902 – 1940 Pacific Highway Tomago NSW 2322). The Tomago Development Site is hereinafter referred to as TDS.

This SAQP has been prepared to investigate the key findings of the ES (September 2015) *Phase 1 Preliminary Site Investigation. 1902 and 1940 Pacific Highway, Tomago NSW 2322.* These findings were:

- Storage and use of chemicals in areas of no observed bunding;
- Mounds / stockpiles observed both on and adjacent to the TDS of an unknown source;
- Septic systems on site;
- Possible fuel and oil leaks from abandoned motor vehicles;
- Areas of dumping (various car parts, and potential asbestos containing material);
- Residential dwelling with eaves of potential asbestos containing material, and flaking paint that has potential to be lead based.
- Air and water borne impacts from surrounding industrial development, in particular Tomago Aluminium Smelter.

The ES (September 2015) Phase 1 report concluded that the TDS is likely to have some contaminating materials present on site; however, it is unlikely that gross contamination exists. The principal risk of the TDS relates to the migration of contaminated media onto the site from the surrounding industrial/ commercial land uses.

The environmental investigation proposed in this SAQP is part of a larger investigation that includes the Bayswater and Liddell power stations. It is proposed that the methodology and results of the Stage 2 Detailed Site Investigation, carried out in accordance with this SAQP, will be reported together with the methodology and results of the investigations on the power stations. This SAQP, relating to investigations proposed for the TDS, has relied on parts of the ES (12 June 2015) *Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Sampling, Analysis and Quality Plan to Identify Pre-Existing Contamination. Reference 15092 RP01_SAQP_Rev2*.

2 Site Identification

The TDS is comprised of two (2) portions of land, separated by commercial / industrial properties. 1940 Pacific Highway Tomago NSW 2322 (Lot 2 DP 1043561 and Lot 3 DP1043561) and 1902 Pacific Highway Tomago NSW 2322 (Lot 2 DP 1043561) are referred to as TDS 1 and TDS 2, respectively. Details of the two properties are summarised in Table 1 below:

Table 1: TDS property description

TDS Property	TDS1	TDS 2
Address	**1940 Pacific Highway Tomago NSW 2322**	**1902 Pacific Highway Tomago NSW 2322**
Lots / DPs	Lot 2 DP 1043561 Lot 3 DP1043561	Lot 2 DP 1043561
Local Government Area	Port Stephens Council	Port Stephens Council
Land Zoning Port Stephens Local Environmental Plan 2013	IN1 – General Industrial	E2 – Environmental Conservation
Site Area	26.3 ha	1.6 ha
Geographic Coordinates (to approximate centre of site)	Lat: -32.814283 **Long**:151.705420	Lat: -32.816389 **Long**: 151.697835

3 Investigation Objectives

This SAQP has been developed specifically to meet the requirements of the AGLM Additional Pre-Existing Contamination Study – Specification: Request for Tender; Bayswater and Liddell Power Stations, April 2015.

The specific objectives of the TDS proposed assessment are to:

- identify significant contamination which may be present at the TDS; and
- provide an opinion as to whether the contamination identified is 'Pre-Existing Contamination'.

For the purpose of this SAQP 'Pre-Existing Contamination' has been defined to mean:

(a) the presence of any contamination (as defined in the *Contaminated Land Management Act 1997 (NSW)*) in, on, under or emanating from or migrating onto or through the Sites (including any soil, groundwater or surface water on or under the Sites) or migrating from the Sites onto any land or water body contiguous with the Sites, to the extent to which it occurred on or before 2 September 2014; and

(b) any pollution (as defined in the *Protection of the Environment Operations Act 1997 (NSW)*) of, or emanating from, the Sites (including any soil, groundwater or surface water on or under the Sites) or harm to the environment resulting from an activity undertaken on the Sites prior to 2 September 2014.

This SAQP has been developed specifically to identify the presence of significant Pre-Existing Contamination on the TDS. It has not been developed to identify the suitability of the TDS for any purpose.

4 Data Quality Objectives

Data quality objectives (DQOs) are statements that define the confidence required in conclusion drawn from data produced for a project, and which must be set to realistically define and measure the quality of the data needed to allow the objective of the investigation to be confidently achieved. Please refer to the ES (12 June 2015) report for detailed analysis of the DQOs.

A summary of the DQOs are provided in Table 2 below.

Table 2: TDS DQO summary.

DQO Steps	Environmental Strategies DQO Planning
1. State The Problem	The TDS has had no known environmental assessment completed. AGLM are currently not aware of and potential environmental of human health liabilities associated with surface and sub-surface contamination that may be present on the TDS. The objective is to identify whether significant historical contamination is present on the TDS and whether the contamination is Pre-Existing Contamination. Systematic sampling of soil from boreholes, observed stockpiles and groundwater from monitoring wells is proposed by this SAQP to identify the presence of significant Pre-Existing Contamination.
2. Identify the Decision	The decisions required to be addressed by this SAQP are to be made in answer to the following questions: 1. Does the TDS represent a risk and/ or liability resulting from potential significant contamination existing prior to 2 September 2014 (the asset ownership transfer date), including offsite and mobile risk and liabilities from soils, groundwater, sediments, and surface water? 2. Does the TDS represent a risk of potential significant contamination impact or migrating onto or offsite and impact human and/or ecological receptors? 3. Does the impact (if any) at the TDS represent unacceptable risk (Tier One assessment) to human health or to the environment, based on the current and continued use of the site? 4. Is impact likely to warrant notification and/ or regulation under the: ▪ NSW CLM Act; and/or ▪ NSW POEO Act? 5. Is material remediation likely to be required and, if so, is remediation required in the short, medium or long terms? 6. Is further investigation required to be undertaken in consequence of the results of the investigation set out in this SAQP?
3. Identify the Decisions to the 3. input	1. Comments & recommendations provided by the AGLM Technical Advisor; 2. Information relating to local geology, including: near-surface geology and anthropogenic materials; hydrogeology – particularly vertical characterisation and aquifer properties; obvious signs of contamination and location; site history; PID screening; and field observations (visual, olfactory, foreign materials) indicating aesthetic issues. 3. New intrusive investigations (drilling, groundwater monitoring wells, sediment and surface water collection). 4. Collection of NATA accredited analytical data from soil, groundwater, sediment and surface water for chemical analysis (as specified by AGLM). 5. Assess whether the laboratory sample containers/preservation chemistries and reporting limits (i.e. PQL's, LOR's) are appropriate for the project 6. Groundwater monitoring results including physio-chemical parameters, presence/absence of phase separated liquid, groundwater elevation data and any impacts to results by the presence of suspended solids in groundwater samples. 7. Review of the contaminants of concern on sampling methodologies, sample locations and sample depths

DQO Steps	Environmental Strategies DQO Planning
	8. Proposed investigation strategy and the accompanying analytical schedule 9. Results of quality control samples collected during the investigation 10. The proposed use and development layout of the site 11. The adopted criteria for soil, groundwater, sediment and surface water 12. Site history reported in the TDS Phase 1 investigation.
4. Define the Boundaries of the Study	***Spatial Boundary***: TDS is a non-operational site used for rural/residential purposes with a total area of 27.9 ha. The ES (October 2015) Phase 1 Preliminary Site Investigation – Tomago NSW identified seven (7) Areas of Environmental Concern (AEC), as shown on Figures 2 and 3, Appendix A. The approx. coordinates of TDS are presented in Table 1. A site location plan is provided in Figure 1, Appendix A. *The baseline assessment within the TDS includes soils and groundwater as follows:* *- The maximum depth of soil sampling shall be 6.0 metres below ground level (mBGL).* *- The maximum depth of groundwater monitoring wells shall be 6.0 m BGL.* ***Practical Constraints (Sampling)****: Dense grasses and overgrown areas where these exist. Slashing of grasses may be required for access purposes based on the type of rig used, but trees will be retained wherever possible. Approval by AGLM is required when any significant trees are to be removed for access purposes ES have currently not allowed for grass slashing.* ***Landuse****: currently TDS 1 is used for residential purposes, and TDS 2 is vacant land.* ***Sensitive Receptors****: potential groundwater users in the vicinity of the site, aquifers beneath TDS site and potential potable water wells, and ecological receptors including brackish water ecological receptors in the Hunter River and adjacent wetlands (mangroves).* ***Temporal Limits****: The temporal boundaries for the TDS assessment are limited to the dates of fieldworks.* ***The Sampling Unit*** *for TDS on which estimates shall be made shall include:* *Soil: 20 soil bores where 4 will be installed with a hand Auger on TDS 2, and sixteen will use a truck mounted drill rig. 10 of the soil bores shall be converted into GW monitoring wells on TDS 1.* *Groundwater (GW): sampling 10 newly installed GW monitoring wells, plus field QC samples* (ie. field duplicates, field triplicates, field blanks). *Surface Water (SW): 2 x surface water samples. One from TDS 1 and one from TDS 2.* *Sediments (SD): 1 x sediment samples (collected from TDS 1). The waterbody identified in the ES (September 2015) Phase I site walkover appeared to be a constructed dam. There was no evidence to suggest that the dam was currently being used by the site occupants. No significant waterbodies were observed on the TDS.* *Material Samples: 10 x collection of potential asbestos containing material (ACM) samples and 1x leaded paint sample. Leaded paint and potential ACM samples will only be collected using non-destructive methods.* *Stockpile Samples: 7 x stockpile samples will be collected from various soil mounds on TDS 1 and TDS 2. The stockpile mounds observed to be on TDS 2, appear to be related to dumping on the adjacent property. The mounds that will be sampled are those which are on the western boundary of TDS 2and that appear to encroach AGLM property.* *Surface samples: Collection of 15 surface samples for analysis of Fluoride, (potential fallout from Tomago Aluminum Smelter) asbestos and lead (from targeted areas) across the TDS.*

DQO Steps	Environmental Strategies DQO Planning
	Please refer to Figure 4 and 5, Appendix A for proposed sampling locations. Refer to the analytical programme in Table 3 of the SAQP.
5. Develop a Decision Rule	***Estimation Problems*** The decision rules for this contamination assessment program are as follows: 1. If concentrations of chemicals of potential concern (COPC) are identified that are greater than the adopted assessment criteria in TDS soils, groundwater, sediments, surface water, or stockpiles, further assessment and/ or management option shall be assessed in order to ensure the TDS are or can be made suitable for the continued land uses stipulated by AGLM and to ensure no significant risk is posed to the environment or human health. 2. If concentrations of COPC are identified that exceed the adopted assessment criteria in groundwater, the potential for off-site and/or on-site migration or for migration to a sensitive receptor will be considered and further works may need to be undertaken, 3. If aesthetic issues are identified this shall require consideration in assessing the management options required for the relevant areas of the Sites to be suitable for open space / recreational use. 4. It should be noted that the above decision rules are considered to be preliminary and depending on the conditions identified at the TDS during the field works, the decision rules may be revised. ***Assessment Criteria*** Soils: NEPM 1999 (Amendment 2013) schedule B1 HIL-D (commercial & industrial), HIL-C (public open space), HIL-C (applied to non-operational areas considered to present a more sensitive land use category, ecological investigation/ screening levels (EIL's/ ESL's) as applicable. It is noted that laboratory analysis of pH & CEC is required to establish site specific EIL's/ ESL's, and an assessment of background conditions. Health Screening Levels for vapour intrusion and direct soil contact HSL-D (commercial & industrial) and HSL for vapour intrusion and direct soil contact intrusive maintenance worker (shallow trench). Groundwater & Surface Waters: NEPM1999 (Amendment 2013) schedule B1 Guideline on Investigation Levels for Soil & Groundwater which reference the following guidance: ANZECC/ ARMCANZ (2000) Trigger Values Fresh Water & level of protection 95% species and level of protection 99% species (bioaccumulation mercury & selenium); NHMRC & NRMMC (2011) Australian Drinking Water Quality Management Strategy; CRC Care Technical Report No.10 Health Screening Levels for Petroleum Hydrocarbons in Soil & Groundwater (2011); Health Screening Levels for vapour intrusion HSL-D (commercial & industrial) and HSL for vapour intrusion intrusive maintenance worker (shallow trench) shall continue to be adopted as per previous ERM assessments. NHMRC (2008) Guidelines for Managing Risks in Recreational Waters (note these shall be applied with reference to NHMRC and NRMMC 2011 referenced above). Sediments: ANZECC/ ARMCANZ (2000) Fresh and Marine Water Quality - Interim Sediment Quality Guidelines (ISQG's), or equivalent Commonwealth of Australia (2009) National Assessment Guidelines for Dredging, and The Handbook for Sediment Quality Assessment (Simpson et al. (2005).
6. Specify Acceptable Limits on Decision Errors	The acceptable limits on decision errors to be applied and the manner of addressing possible decision errors have been developed based on Data Quality Indicators (DQI's) of precision, accuracy, representativeness, comparability, completeness, and sensitivity (known as PARCCS) and which shall be defined in detail (application, frequency, acceptance criteria, and assessment) as part of the detailed SAQP in Step 7 of the DQO planning process (i.e. the next step).

DQO Steps	Environmental Strategies DQO Planning
	The potential for significant decision errors are to be minimised by: 1. Completing a robust DQI program for field and laboratory QA/QC with assessment of data and information whereby there shall be a probability that 95% of data shall satisfy DQI's, and therefore a limit on the decision error shall be 5% that a conclusion maybe incorrect, 2. Assessing whether sampling and analytical density for the purposes of the assessment has been applied, 3. That representative sampling methodologies have been applied by appropriately trained and experienced field personnel in appropriate environmental weather conditions and 4. Ensuring that the criteria set for the assessment works are appropriate for the proposed use of the TDS
7. Optimise the Design for Obtaining Data	*The SAQP has been designed to ensure that the problems identified in the Step 1 of the DQO planning process can be solved within the time, budget, available resources and constraints of the project. The investigation program shall ensure minimise sample or measurement errors.* *The purpose of this step is to identify a resource effective field investigation sampling design that generates data that are expected to satisfy the DQI parameters and give confidence to the chosen decision(s). The outputs of this final DQO step is the sampling design that shall guide development of the field sampling and analysis plan. This step provides a general description of the activities necessary to generate and select data collection designs that satisfy decision performance criteria.* *This TDS SAQP shall specifically include, but not be limited to the following content:* 1. Methodology for identifying pre-existing contamination, 2. Sampling locations determined by ES employing professional judgement as shown on relevant drawings (Figure 4 and 5 Appendix A) that will be endorsed by the AGLM Technical Advisor prior to commencement of the sampling program. 3. Identify the field sampling teams including backup team on standby. 4. Procedures for the field teams to maintain excellent records (borelogs, monitoring wells, qualitative sample observations for recording evidence to be used to derive the opinion on whether pre-existing contamination exists at any of the Sites), 5. Document the chain of command/ communication process from Project Director through to field & office personnel and client (noting that communication is very important as it may trigger the need to report contamination), 6. Describe the use of field tablets for use in capturing real-time field record entry and integrated with GPS tracking & COC forms, 7. Provision for pre-entered sample ID's on COC's & field templates to eliminate field errors and ensure ready interchange of data from field to office environments, 8. Provision of purpose built field vehicles equipped with calibration standards and fragile field equipment, for immediate retrieval to ensure efficiency of sampling & quality, 9. Provision for GPS embedded into site photographs for each sample location, and Real-time review/ spot audits of COC, SRN, lab reports as they generated, sampling practices (as per Project QA Plan). Information on the above are presented in the ES (12 June 2015) SAQP. This SAQP summarises some of the above where necessary.

5 Data Quality Indicators

To assess the achievement of the project DQO, data quality indicators (DQIs), precision, accuracy, representativeness, comparability and completeness, are employed. The DQIs are defined as follows:

- Accuracy is a measure of the agreement between an experimental determination and the true values of the parameter being measured.
- Precision is a measure of the agreement between duplicate or replicate samples.
- Representativeness is a measure of how closely the measured results reflect the actual concentration or distribution of the chemical constituent in the sample of each environmental medium and whether samples of each environmental medium are representative of each medium.
- Comparability is a qualitative assessment made to express the confidence with which one data set may be compared with another.
- Completeness is a quantitative measure defined as the percentage of total measurements made that are judged to be valid compared to the total number of measurements that were proposed to be made.

DQIs are used to assess the achievement of both field and laboratory procedures, in accordance with the requirements of NSW DECC (2006) and NEPC (2013).

The field QA/QC program set out in this SAQP requires fieldwork to be conducted in accordance with the requirements of NEPC (2013), Australian Standard AS4482.1-2005 to measure the precision of the field and laboratory analyses and to determine the accuracy of the analytical results. All samples will be analysed by NATA accredited laboratories. Field QA will include compliance with appropriate standard operating procedures.

The laboratory QA/QC program set out in this SAQP requires chemical analyses to be conducted by laboratories in accordance with the registration of analytical methods provided by the National Association of Testing Authorities Australia (NATA).

Field QC samples will be collected and analysed by commercial laboratories at the following frequencies:

Precision

- Field duplicates ≥ 5%
- Inter-laboratory duplicates ≥ 5%
- Laboratory duplicates ≥ 10%

Accuracy

- Surrogate spikes All organics by GC
- Matrix spikes ≥ 1/media type
- Laboratory control samples ≥ 1/lab batch

Representativeness

- Rinsate samples ≥ 1/field batch
- Trip blanks ≥ 1/field batch (volatiles)
- Trip spikes ≥ 1/field batch (volatiles)
- Laboratory blanks ≥ 1/lab batch

The QA/QC program will also include an assessment of comparability and completeness. No additional samples will be collected for these quality attributes, rather their assessment will focus on consideration of relevant field and laboratory factors, in accordance with the requirements of NSW DECC (2006) and NEPC (2013).

Evaluation of the field DQIs compared to the DQOs will be completed as follows:

Completeness A measure of the amount of useable data (expressed as %) from a data collection activity		
Field Considerations	**Laboratory Considerations**	**Comments**
▪ All locations sampled. ▪ All samples collected (from grid and at depth). ▪ SOPs appropriate and complied with. ▪ Experienced sampler. ▪ Documentation correct.	▪ All samples analysed according to SAQP. ▪ All analytes analysed according to SAQP. ▪ Appropriate methods and PQLs. ▪ Sample documentation complete. ▪ Sample holding times complied with.	The required percentage completeness should be specified in the SAQP. All required data must be obtained for critical samples and chemicals of concern. Incompleteness is influenced by: ▪ Field performance problems (access problems, difficulties on site, damage, …) ▪ Laboratory performance problems (matrix interference, invalid holding times, …) ▪ Matrix problems
Comparability The confidence (expressed qualitatively) that data may be considered to be equivalent for each sampling and analytical event		
Field Considerations	**Laboratory Considerations**	**Comments**
▪ Same SOPs used on each occasion ▪ Experienced sampler ▪ Climatic conditions (temperature, rainfall, wind, …) ▪ Same types of samples collected (filtered, size fractions, ...)	▪ Sample analytical methods used (including clean-up) ▪ Sample PQLs (justify/ quantify if different) ▪ Same laboratories (justify/ quantify if different) ▪ Same units (justify/quantify if different).	▪ Same approach to sampling (SOPs, holding times…) ▪ Quantify influence from climatic or physical conditions ▪ Samples collected, preserved, handled in same manner (filtered, same containers)
Representativeness The confidence (expressed qualitatively) that data are representative of each media present on the site		
Field Considerations	**Laboratory Considerations**	**Comments**
▪ Appropriate media sampled according to SAQP ▪ All media identified in SAQP sampled	▪ All samples analysed according to SAQP ▪ Rinsate samples indicate that decontamination procedures adequate. ▪ The frequency of laboratory blanks acceptable and the results were within specified ranges.	▪ Samples must be collected to reflect the characteristics of each media ▪ Sample analysis must reflect properties of field samples ▪ Homogeneity of the samples ▪ Appropriate collection, handling, storage and preservation ▪ Detection of laboratory artefacts, e.g. contamination blanks
Precision A quantitative measure of the variability (or reproducibility) of data		
Field Considerations	**Laboratory Considerations**	**Comments**
▪ SOPs appropriate and ▪ complied with	Analysis of: ▪ laboratory and Inter-laboratory duplicates	▪ Measured by the coefficient of variance or standard ▪ deviation of the mean or by RPDs

	▪ field duplicates ▪ laboratory-prepared volatile trip spikes	▪ Field duplicates measure field and laboratory precision ▪ Laboratory duplicates measure analytical precision
Accuracy (bias) A quantitative measure of the closeness of reported data to the true value		
Field Considerations	**Laboratory Considerations**	**Comments**
▪ SOPs appropriate and complied with	Analysis of: ▪ trip blanks ▪ rinsate blanks ▪ reagent blanks ▪ method blanks ▪ matrix spikes ▪ matrix spike duplicates ▪ surrogate spikes ▪ reference materials ▪ laboratory control ▪ samples ▪ laboratory-prepared ▪ spikes	Bias introduced: ▪ by chemicals during handling or transport ▪ from contaminated equipment ▪ from contaminated reagents ▪ during laboratory analysis ▪ during laboratory preparation and analysis (may be high or low) ▪ precision of preparation and analytical method

The acceptable limits for soil and groundwater are as follows:

- %RPD for laboratory duplicates for Total Recoverable Hydrocarbons (TRH) and Benzene, Toluene, Ethylbenzene and Xylene (BTEX) analysis is less than 60%.
- Recovery of matrix spikes and surrogate spikes is as per the laboratory's Quality Assurance targets accepted under their National Association of Testing Authorities (NATA) accreditation.
- Trip Spike recoveries are acceptable when between 70-130% recovery. Between 60%-70% requires discussion on the potential error and acceptability of data. If trip spike recovery results are <60%, further discussions on data acceptability is required.

Precision is measured using either standard deviation (SD) or per cent Relative Percent Difference (%RPD). For the purpose of the SAQP RPD has been adopted. Replicate data for field duplicates of organics is expected to be as follows:

- RPD criteria of 50% or less, for concentrations > or = 10 times EQL;
- RPD criteria of 75% or less, for concentrations between 5 and 10 times the EQL; and
- RPD criteria of 100% or less, for concentrations < 5 times EQL.

Replicate data for field duplicates for inorganics, including metals is expected to be as follows:

- RPD criteria of 30% or less, for concentrations > or = 10 times EQL;
- RPD criteria of 75% or less, for concentrations between 5 and 10 times the EQL; and
- RPD criteria of 100% or less, for concentrations < 5 times EQL.

Where acceptable limits for field duplicates are not met, a discussion on the implications to the data will be provided.

6 Conceptual Site Model

6.1 Areas of Environmental Concern

The ES (September 2015) Phase 1 report did not identify the potential for significant contamination to be present on the TDS, but seven Areas of potential Environmental Concern (AEC) were identified as follows:

- AEC 1: Septic Tanks.
- AEC 2: Residential Compound.
- AEC 3: Abandoned Motor Vehicles.
- AEC 4: Mounds / Potentially Stockpiled Material.
- AEC 5: Dumped waste (including potential ACM).
- AEC 6: Dam and stockpiled material.
- AEC 7: Stockpiled material encroaching TDS 2 eastern boundary from adjacent property.

The AECs identified above are considered to be of low environmental risk and are expected to give rise to only localised, if any, contamination of environmental media.

Figures 2 and 3 show the locations of the AECs, and Figure 6 for observations of stockpiles encroaching TDS 2 (AEC 7).

ES considers the areas outside of the seven AECs to be 'background locations'. Sampling in these areas with no known potentially contaminating activities, will be completed for site coverage, and to determine potential migration of contamination from on- and off-site sources.

6.2 Geology

A review of the Newcastle 1:250,000 Geological Series Sheet S1 56-2 (NSW Department of Mines, 1966) indicates that a portion of the site is mapped as Qa – Quaternary gravel, sand, silt, clay, "Waterloo Rock" Marine and freshwater deposits. The majority of the site, however, is mapped as Pt – Permian, Tomago Coal Measures, of shale, mudstone, sandstone, tuff and coal.

A geotechnical investigation of the TDS 1 was completed by Douglas Partners (DP) in 2008. The DP (June 2008) *Geotechnical Investigation. Proposed Gas Storage Area. Proposed Power Station. Old Punt Road, Tomago. Prepared for Macquarie Generation. Project 39762.01* summarised the subsurface conditions on TDS 1 as follows:

- TOPSOIL – 0.0 to 0.05/0.7 mbgl;
- Firm Clayey SILT/Silty Clay – 0.05/0.3 to 0.15/1.0 mbgl;
- Stiff CLAY/Silty CLAY – 0.3/0.8 to 1.2/4.0 mbgl;
- BEDROCK – 1.2/4.2 mbgl

During the ES Phase 1 site walkover (16th July 2015) the following was observed:

> *"The site was observed to have raised mounds (*refer to AEC 4 and AEC 7 Figures 2 and 3, Appendix A*) covered in vegetation that indicate the potential for an unknown fill material within the site. Cutting and filling activities may have occurred on the site in order to construct the drainage systems to the manmade dam. Some gravels were noted at one vegetated mound."*

6.3 Hydrogeology

The DP (June 2008) geotechnical report indicates that groundwater (perched layer) on the southern portion of TDS 1 is present above the bedrock at depths beyond 1.5mbgl. On the northern portion of the site it may be necessary to drill into the bedrock in order to intercept groundwater. Groundwater is likely to flow to the west, or south west towards the Hunter River. Therefore, there is the potential for contaminated groundwater (if present) to enter the site from the northern, or eastern boundaries. Final groundwater flow direction will be determined following the completion of groundwater well installation; development; surveying and gauging.

6.4 Contaminants of Potential Concern

Although the Stage 1 Preliminary Site Investigation identified only a low risk of significant contamination being present on the TDS, the Contaminants of Potential Concern (CoPC) adopted for this SAQP allow for identification of a wide range of potentially contaminating activities to be identified. The COPC adopted for this SAQP are:

- Total recoverable hydrocarbons (TRH);
- Fluoride;
- Faecal and Total Coliforms (F&TC);
- E Coli;
- Volatile Organic Compounds (VOCs);
- BTEX (benzene, toluene, ethyl benzene, xylene);
- Volatile Organic Compounds;
- 8 priority metals (Arsenic (As),Cadmium (Cd), Chromium (Cr), Copper (Cu), Lead (Pb), Mercury (Hg), Nickel (Ni), Zinc (Zn));
- Polycyclic aromatic hydrocarbons (PAHs);
- Organochlorine pesticides (OCP);
- Organophosphorus pesticides (OP);
- Polychlorinated biphenyls (PCBs); and
- Asbestos.

ES have included VOCs and PCBs as CoPC due to the presence of fill on the TDS sourced from an unknown origin. ES considers this approach to be conservative. ES notes that sediment samples will be analysed for Total Organic Carbon (TOC).

Table 3 below outlines the CoPC which will be analysed for the following environmental media in each AEC or at background location on the TDS.

Table 3: AEC CoPC

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
AEC 1	Soil	1	2	▪ TRH ▪ BTEX ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ VOCs – selected analysis*** ▪ Asbestos – surface/ fill samples only ▪ F&TC ▪ E Coli

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
	Groundwater	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ F&TC ▪ E Coli
AEC 2	Soil	3	6	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis*** ▪ OCP – surface / fill samples only ▪ OP – surface / fill samples only ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only ▪ F&TC – 1 sample only ▪ E Coli – 1 sample only
	Groundwater	1	1	▪ TRH ▪ BTEX ▪ VOCs – selected analysis*** ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Material Analysis	2	2	▪ Lead ▪ Asbestos
	Surface Soils	5	5	▪ Lead ▪ Asbestos ▪ Fluoride
AEC 3	Soil	1	2	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ PCBs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Groundwater	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Material Analysis	1	1	▪ Lead ▪ Asbestos
AEC 4	Soil (stockpile / mound	2	2	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
	samples)			▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Material Analysis	1	1	▪ Lead ▪ Asbestos
AEC 5	Soil	5	10	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Groundwater	3	3	▪ TRH ▪ BTEX ▪ VOCs – selected analysis*** ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Material Analysis	2	2	▪ Lead ▪ Asbestos
AEC 6	Soil (stockpile / mound samples)	2	2	▪ TRH ▪ BTEX ▪ PAHs ▪ PCBs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Surface Water	1	1	▪ TRH ▪ BTEX ▪ VOCs – selected analysis*** ▪ PAHs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Sediment	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ TOC
AEC 7	Soil (stockpile / mound samples)	3	3	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ OCP ▪ OP ▪ PCBs ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg,

AEC	Media	Number of sampling locations	No. of Primary Samples	Analysis
				Ni, Zn) ▪ Asbestos – surface/ fill samples only
	Material Analysis	2	2	▪ Lead ▪ Asbestos
Background Locations	Soil	6	12	▪ TRH ▪ BTEX ▪ PAHs ▪ OCP ▪ OP ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ Asbestos – surface/ fill samples only ▪ F&TC ▪ E Coli
	Groundwater	4	4	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn) ▪ F&TC ▪ E Coli
	Surface Water	1	1	▪ TRH ▪ BTEX ▪ PAHs ▪ VOCs – selected analysis*** ▪ 8 Metals (As, Cd, Cr, Cu, Pb, Hg, Ni, Zn)
	Surface Soils	10	10	▪ Lead ▪ Asbestos ▪ Fluoride
	Material Analysis	2	2	▪ Lead ▪ Asbestos

* ES notes that the CoPC listed in Table 3 above, are more extensive than originally requested by AGLM.

** Materials analysis will only be completed potential ACM or leaded paint is observed, and where non-destructive sample techniques can be implemented.

*** Analysis of VOCs will be based on field observations at the time of the intrusive investigations. No more than a quarter of all soil and groundwater samples will be analysed for VOCs. If field observations indicate that additional VOC analysis is required, then ES will request a variation to the costs provided in Appendix B of this SAQP.

7 Proposed Sampling Regime

ES have developed this sampling plan using a combination of both targeted and grid based sampling locations, to determine the risk of contamination on the TDS and achieve the objectives outline in Section 3 of this SAQP.

ES reserves the right to do additional sampling if required to adequately satisfy the objective of the project.

ES has included additional analysis of sediment, surface water, surface soils, and stockpiles based on information reviewed during the TDS Phase 1 investigation (refer to Table 3).

Table 4 below provides a brief rationale for each of the 10 soil bores and 10 groundwater monitoring wells proposed to be completed at the TDS during the intrusive works.

Table 4: Sampling location rationale: Soil bores and groundwater monitoring wells.

AEC	Sampling Location Name	Sample Type	Rationale
AEC 1: Septic Tanks.	T_MW01	Soil bore/ Groundwater monitoring well	Located downgradient of an observed septic tank
AEC 2: Residential Compound.	T_MW02	Soil bore/ Groundwater monitoring well	Located in the immediate vicinity of where un-bunded fuels, oils and other chemicals were observed to be stored
	T_SB01	Soil bore	To provide further site coverage on AEC 2
	T_SB02	Soil bore	Located in the immediate vicinity of where un-bunded fuels, oils and other chemicals were observed to be stored.
AEC 3: Abandoned Motor Vehicles.	T_MW03	Soil bore	Located in the immediate vicinity of where abandoned, demolished and burnt out motor vehicles were observed.
AEC 5: Dumped waste (including potential ACM).	T_MW04	Soil bore/ Groundwater monitoring well	Located on the likely downgradient northern boundary of the site to measure concentrations of groundwater migrating offsite. Also located on AEC 5 where waste dumping was observed.
	T_MW05	Soil bore/ Groundwater monitoring well	Located on the eastern boundary of the site within AEC 5. Placed in a location in the vicinity of dumped waste materials.
	T_MW06	Soil bore/ Groundwater monitoring well	Located on the south-eastern boundary of the site within AEC 5. Placed in a location in the vicinity of dumped waste materials.
	T_SB03	Soil bore	Placed in a location in the vicinity of observed dumped waste materials.
	T_SB04	Soil bore	Placed in a location in the vicinity of observed dumped waste materials.
Background Areas	T_MW07	Soil bore/ Groundwater monitoring well	Placed on the south-western boundary of TDS 1 to measure groundwater concentrations either entering or exiting the site (dependent on groundwater flow direction).

AEC	Sampling Location Name	Sample Type	Rationale
	T_MW08	Soil bore/ Groundwater monitoring well	Placed on the North-western boundary of TDS 1 to measure groundwater concentrations either entering or exiting the site (dependent on groundwater flow direction).
	T_MW09	Soil bore/ Groundwater monitoring well	Placed in the centre of TDS 1 to provide further site coverage and aid in the determination of groundwater flow direction.
	T_MW10	Soil bore/ Groundwater monitoring well	Placed on TDS 1 to provide further site coverage and aid in the determination of groundwater flow direction.
	T_SB05	Soil bore	Placed on TDS 1 to provide further site coverage in areas observed to be cleared of vegetation.
	T_SB06	Soil bore	Placed on TDS 1 to provide further site coverage in areas observed to be cleared of vegetation.
	T_SB07	Hand auger	Placed on the north eastern boundary of TDS 2 to provide site coverage in areas of cleared vegetation / access.
	T_SB08	Hand auger	Placed in the centre of TDS 2 to provide site coverage in areas of cleared vegetation / access.
	T_SB09	Hand auger	Placed on the south western boundary of TDS 2 to provide site coverage in areas of cleared vegetation / access.
	T_SB10	Hand auger	Placed on the southern boundary of TDS 2 to provide site coverage and delineate observed stockpiles on the western boundary, in areas of cleared vegetation / access.

8 Sampling Methodology Service Location

The locations of new bores (as outlined in Figure 4 and Figure 5, Appendix A) have been determined through the use of professional judgement by a senior ES scientist/engineer during a Site Walkover inspection and reviewed historical information pertaining to the TDS. The locations will be marked on the surface of the ground using paint and/ or plastic stake (driven into the ground) to indicate the appropriate bore location.

Prior to commencing intrusive investigations, diagrams of underground services from the dial before you dig (DBYD) database will be reviewed.

A certified underground service locator will be contracted to perform electromagnetic scanning and Ground Penetrating Radar (GPR) survey for the purpose of clearing drilling locations of infrastructure and subsurface structures.

Where any doubt relating to the possible presence of underground services occurs, a hand auger will be used to a depth of 1 m bgl.

8.1 Completion of Boreholes

Boreholes will be drilled using either track-mounted a truck-mounted drill rigs using split tube samplers and solid flight augers.

Due to access restrictions (including high pressure gas lines, telecommunication services and highly vegetated areas) on TDS 2, four hand augers will be used to sample the sub-surface soils to a maximum depth of 1.0m bgl or refusal.

Each bore hole will be extended to a maximum depth of 3 m below surface level or at least 0.5 m into natural material or to refusal (whichever is shallower).

Three (3) or more soil samples will be collected from each borehole with two (2) selected samples submitted for immediate chemical analysis. The remaining samples were held for potential additional analysis. Sampling intervals were typically:

- One in the fill;
- One in the natural material;
- On the basis of field observations, evidence of staining or olfactory indicators; and
- At any changes in the strata targeting fill and natural material.

All soil samples collected for chemical analysis will be screened in the field for Volatile Organic Compounds (VOCs) using a Photo Ionisation Detector (PID). The PID will be calibrated at the start and end of each day of use.

The locations of bores will be surveyed using a system relative to Australia Map Grid (AMG).

8.2 Reinstatement

All monitoring wells, installed within the residential compound area on TDS2 will be finished off with a flush-mounted cast iron road box using concrete or asphaltic cement products (to match existing) constructed to prevent surface water from entering wells. Wells installed other areas of the TDS will be finished with the top of the well sticking up at least 300mm above the surrounding surface level. ES recommend the use of steel monuments to ensure protection of well stick-ups. All monitoring wells will be secured with a lockable well cap.

The monitoring well identification number will be engraved in the top of the road box or painted on the well pipe and also engraved on an aluminium tag attached to each well cap.

8.3 Storage of Waste

Surplus materials generated during installation of soil bores and test pits (i.e. soil cuttings) will be replaced into the bores in reverse order of excavation and compacted by several traverses of the drill rig/excavator, if no contamination was identified by visual, olfactory or PID screening and if groundwater was not encountered. Any grass or other plant that is excavated will be placed at the surface of the reinstated bore or test pit where possible.

Groundwater generated during development and purging of wells will be stored in 200 L steel drums as provided by ES.

Surplus materials generated during installation of soil bores or groundwater monitoring wells that cannot be replaced into bores or test pits, will be stored in appropriately labelled 200 L capped steel drums (label will be marked in letters not less than 25 mm high in water-proof paint).

Drums will be stored in locations directed by AGLM. All sample locations will be made free of waste generated during sampling works. Permission from AGLM will be first sought prior to disposing of waste in any of the existing storage/disposal containers on each site.

8.4 Nomenclature for Test Locations and Sample Identification

Test locations are required to be identified as follows:

- Soil bores, groundwater monitoring wells, surface water, sediment, surface soils and stockpile sample collection points are required to be located using a unit relative to the Australian Map Grid (AMG); and
- The collars of groundwater monitoring wells are required to be referred to elevations relative to Australian Height Datum (AHD).

All samples collected from the TDS will commence with the letter “T”. Samples collected from AECs are required to identify the AEC. For example, a sample collected from AEC 4 at the TDS would be labelled “T_4_”.

The type of sample is required to be identified as being collected from a:

- Soil bore as “SB”;
- Surface soil grab sample “SG”;
- Groundwater monitoring well as “MW”;
- Water grab sample as “W”; and
- Sediment sample as “SD”

On the TDS, the depth samples are collected from is required to be stated in metres below surface to the nearest 0.1 m.

For water grab samples, the depth samples are collected from is required to be stated in metres below surface to the nearest 0.1 m.

For sediment samples, the depth samples are collected from is required to be stated in metres below surface of the sediments to the nearest 0.1 m.

For example:

- A soil sample from the TDS at AEC 1 from soil bore 2 at a depth of 2.1 m is labelled as “T_1_ESSB02_2.1”; and
- A groundwater sample from the TDS at AEC 2 from groundwater monitoring well at location 3 from a depth of 4.5 m is labelled as “T_2_ESMW03_4.5;

A sediment sample collected from sediment within Lake Liddell at location 401 from a depth of 0.2 m beneath the surface of the sediments is labelled as “LL-SD401-0.2”.

8.5 Soil Logging and Sampling

Soil sampling will be conducted during borehole construction and the soil type/s will be described according to the Unified Soil Classification System (USCS) and a detailed log will be completed at each location describing at relevant depth intervals:

- Fill materials, including the presence or absence of indicators of contamination, such as presence of chemical odours, unusual staining, anthropogenic materials, including asbestos-containing materials,
- Natural soils according to the USCS classification;
- Presence or absence of moisture

In addition, the log will record at each test location, the presence or absence of indicators of contamination at the surface, such as:

- salt deposits,
- dead or stressed vegetation,
- staining, or
- anthropogenic materials.

During the works, fill and natural soil samples will be collected using disposable nitrile gloves. In some cases it may be necessary to sample from the solid-flight auger bit where sample recovery from the push tube is not optimum. This will only be completed with strict supervision ensuring that a sample is obtained only from the bottom of the cutting bit and not allowing cross-contamination of the sample and minimising the loss of VOCs.

The soil samples will then be subdivided with one part being put into snap -lock plastic bags for screening with the PID and the other being placed into a laboratory prepared 250 ml glass jar with Teflon lined lids with the details of the sample, including the sample name, the job number, the date of sample and the sample depth.

For additional sample integrity, the disposable nitrile gloves will be replaced between each sampling location.

Each soil sample will be described in general accordance with the Unified Soil Classification System (USCS) and details of any discolouration, staining, odours or other indicators of contamination and the presence of anthropogenic materials, especially asbestos-containing materials, will also be noted.

Samples that exhibit visual or olfactory evidence of contamination will be submitted for laboratory analysis. If no PID or sensory indication of contamination is noted, one sample of fill material and representative natural samples will be submitted for analysis. Depth samples, typically comprising changes in soil type, will be retained for future analysis, if required.

8.6 Groundwater Sampling

8.6.1 Locations of groundwater monitoring wells

The locations of groundwater monitoring wells will be will be determined using professional judgement by a senior ES scientist/engineer during a Site Walkover inspection. The locations will be marked on the surface of the ground using paint to indicate the bore number and either a wooden or plastic stake driven into the ground.

8.6.2 Construction and Materials

All soil bores will be extended to a maximum depth of 6 m below surface level and converted into groundwater monitoring wells.

The groundwater monitoring well screens will comprise 50 mm ID, Class 18, threaded, flush jointed uPVC with machine slots of 0.5 mm width. Casing for the wells will comprise 50 mm ID, Class 18, threaded, flush jointed uPVC. Screen and casing will be joined using Viton™ O-rings which are chemically resistant to petroleum hydrocarbons and chlorinated solvents.

Screened sections of monitoring wells will be constructed above and below the groundwater level to enable any light non-aqueous phase liquids (LNAPL), if present, to enter the monitoring well.

If confined conditions are encountered (the static water level is above the depth of water entry) consideration will be given to inserting shorter screens as the behaviour of LNAPL in confined groundwater is different from unconfined groundwater, and can lead to different design considerations. We anticipate that within the fill horizon, unconfined conditions will result, but within the Permian consolidated sequence, confined conditions may result.

The void will be gravel packed with 1-2mm of washed graded gravel to approximately 0.5m above the top of the screen interval. This will be followed by a cement/bentonite seal installed above the gravel pack to just below the ground surface.

Groundwater monitoring wells, top of casing, will be surveyed using a differential GPS relative to Australia Map Grid (AMG) and elevations will be relative to Australian Height Datum (AHD).

8.6.3 Well Development and Groundwater Sampling

Methods and standards set out in guidance documents will be adopted for the groundwater development and sampling. The guidance documents are as follows:

- NSW DEC (2007) Guidelines for the Assessment and Management of Groundwater Contamination;
- VIC EPA (2006) Publication 668, Hydrogeological Assessment (Groundwater Quality) Guidelines; and
- VIC EPA (2000) Publication 669, Groundwater Sampling Guidelines.

Development of the monitoring wells will be conducted using a combination of stainless steel bailer and a 12 v submersible pump. The stainless steel bailer and pump will be cleaned with a Decon 90 wash mixture and rinsed with potable water between each monitoring well. Each well will be developed until the majority of sediment is removed to ensure a good connection between the screened borehole interval and the surrounding aquifer. Well development will occur within 48 hours of monitoring well installation.

Sampling from wells will take place a minimum of 5 days following development.

Prior to sampling, and following removal of the well cap, the headspace of each well will immediately be screened with a PID to determine the likely presence, or otherwise, of volatile compounds. The PID will be calibrated at the start and end of each day of use. Following well headspace screening, all wells will be gauged with an interface water level meter to determine depth to water below top of casing and the presence, or otherwise, of LNAPL or dense non aqueous phase liquids (DNAPL). If the interphase meter detects either LNAPL or DNAPL, the thickness will be recorded and the presence confirmed with a dedicated Teflon lined clear bailer.

Prior to collection of samples, all monitoring wells will be purged using low-flow techniques using either a peristaltic pump or micropurge pump and controller. Monitoring wells will be purged at a flow rate of the order of 0.1 - 0.5 L/min to minimise the suspended solids within the purge water. However, this is dependent on site-specific hydrogeology. A purge rate that minimises drawdown (<0.1m) within the well will be adopted and continued until the groundwater parameters (dissolved oxygen, pH, temperature, electrical conductivity and

redox) have stabilised to within approximately 10% over three consecutive readings (pH +/-0.1, temperature +/-10%, electrical conductivity +/-3%, dissolved oxygen +/-10%, and redox +/-10%). Physical indicators such as the presence (and percentage) of suspended solids, colour, the presence/absence and nature of odours and the presence/absence of slicks or sheens on purge water will be recorded on all field sheets.

Dedicated Teflon lined LDPE tubing will used at each monitoring well. The interface probe will be thoroughly decontaminated between gauging events with a phosphate-free detergent (Decon 90) and rinsed with potable water.

Low-flow sampling equipment will be used to fill the appropriately preserved laboratory-prepared sample containers with groundwater extracted from each well.

The samples for metals will be submitted for analysis both filtered through a 0.45 μm cellulose filter and non-filtered.

8.7 Sediment Sampling

Sediment samples will be collected using sludge sampling equipment that is designed to retain samples from non-cohesive materials, including underwater sediment in shallow lakes, streams, and various types of impoundments with a capability of capturing an undisturbed sample. The samplers can be used to take undisturbed samples up to 0.3m thick in single use sealable plastic liners, suitable for geotechnical and/or chemical analysis.

Excess or unsuitable sediment will be collected and stored as waste in 200 L steel drums as for waste materials from soil bores and test pits – it must not be disposed into the water body.

8.8 Surface Water Sampling

There are many acceptable methods of collecting water samples. However, ES will be collecting surface water samples via an extension pole with a Teflon cup (i.e. dip sampler). The water will be collected at a consistent depth of approximately 300mm below the water surface at each location. The surface water collected via the dip sampler will be carefully transferred to appropriately preserved laboratory prepared sample containers. All sample containers will be completely filled to eliminate headspace and minimise the loss of volatile compounds. The samples for metals will be submitted for analysis both filtered through a 0.45 μm cellulose filter and non-filtered.

The surface water parameters (dissolved oxygen, pH, temperature, electrical conductivity, redox and turbidity) will be recorded during sample collection.

The dip sampler cup will be thoroughly decontaminated between sampling location with a phosphate-free detergent (Decon 90) and rinsed with potable water.

8.9 General Sample Handling Protocols

Notwithstanding the protocols outlined in Section 8.1 to 8.8 above; the following sample handling protocols will apply to all samples collected from the TDS:

- As soon as practicable after collection, samples will be labelled and placed on ice in an insulated container that is to be stored in a secure location and chain-of-custody documentation will be completed;
- All samples will be submitted to NATA accredited laboratories under chain of custody protocols.
- For additional sample integrity, disposable nitrile gloves will be replaced between each sampling location.

9 Unexpected Finds Protocol

9.1 Unexpected Finds Protocol

ES is unaware of any previous contamination investigation into the TDS and the ES Phase 1 considered the AECs on the TDS to be of low environmental risk and is expected to give rise to only localised, if any, contamination of environmental media.

Nevertheless, it is imperative that the potential for contaminated material to impact TDS occupants and the remainder of the TDS is minimised during the works program and that such material is isolated for assessment and characterisation. Following this remediation may be required. If unexpected findings or environmental issues are encountered during site works, the following protocol is to be followed:

- cease disturbance of the affected site and evacuate the immediate area;
- contact ES field leader;
- ES are to conduct an assessment of the location and extent of the suspected contaminated soil/unexpected find;
- if ES identify that the contamination is significant and may pose an unacceptable risk of harm to human health or to the environment, the ES field leader is to contact the AGLM representative as soon as practicable;
- all areas are to be isolated and secured against unintended access;
- temporary encapsulation (sealing) of the suspect area to ensure no airborne spread of contamination occurs may be appropriate. This may include friable asbestos or if high wind is spreading dust from the suspect area, this may involve clean soil or plastic sheeting. Ensure workers wear appropriate PPE whilst encapsulating the suspect area;
- dust should be prevented by wetting the soil and drainage controls should be arranged where there is a potential for runoff to occur (runoff should be minimised);
- warning signs should be placed in the vicinity of the suspected material;
- an unexpected findings incident report must be completed by ES;
- visual assessment, sample collection and laboratory analysis if required, will be undertaken by ES with reference to the relevant guidelines;
- if necessary, ES will advise on further environmental controls that may require establishment to minimise the potential for migration of contaminants from the impacted area;
- once laboratory results are available, evaluation of analytical data and site observations are to be undertaken with respect to site specific health investigation levels, phytotoxicity criteria and waste classification criteria. An unexpected findings incident report with final classification of soils, including whether the soils are suitable for the proposed land use or need to be remediated and the proposed remedial method and estimated volumes (or further characterisation works that are considered to be required) will be forwarded for comment by AGLM; and
- the area is to be reopened for earthworks following clearance of site (based on laboratory results) or management by AGLM.

10 Identification of Pre-Existing Contamination

10.1 Requirement for additional investigation

This SAQP has provided the quality assurance and quality control procedures and the methodology for identifying 'Pre-Existing Contamination' on the parts of the TDS identified to pose the highest risks, which are the AECs. However, it is recognised that there may be the requirement to undertake investigation additional to that set out in this SAQP to fully identify all 'Pre-Existing Contamination'.

10.2 Identification of 'contamination'

The definition of 'Pre-Existing Contamination' refers to 'contamination' as defined in the *Contaminated Land Management Act 1997 (NSW)* (CLM Act).

The CLM Act relevantly defines contamination to mean 'the presence in, on or under the land of a substance at a concentration above the concentration at which the substance is normally present in, on or under (respectively) land in the same locality, being a presence that presents a risk of harm to human health or any other aspect of the environment.'

Without limiting this definition, this SAQP proposes that the presence of contamination at the TDS will be confirmed when any of the following conditions are identified:

This SAQP proposes that the presence of contamination at the Sites will be confirmed when any of the following conditions are identified:

- **Soil contamination (including surface soils and stockpiled soils)** – when concentrations of one or more chemicals of concern exceed the Health Investigation Level A (HIL A) or Health Investigation Level C (HIL C);
- **Groundwater and surface water contamination** - when concentrations of one or more chemicals of potential concern exceed the 95% levels of protection as defined in the ANZECC 2000 Marine and Freshwater Quality Guidelines;
- **Sediment contamination** - when concentrations of chemicals of potential concern exceed the ISQG–low level for protection of aquatic species;
- **Water contamination** – when concentrations of one or more chemicals of potential concern exceed relevant criteria for primary and secondary contact by human users as well as the Australian Water Quality Drinking Criteria (ADWG);

These levels are generally the equivalent of Tier One Guidelines as defined in the NEPM 1999 (as amended 2013). To more fully assess the risk posed by contaminants identified in the proposed intrusive investigation to human health or to the environment, a Tier Two Risk Assessment may need to be derived at a later stage, but this process is outside the scope of this SAQP.

10.3 Identification of Pollution

The definition of 'Pre-Existing Contamination' refers to 'pollution' as defined in the *Protection of the Environment Operations Act 1997 (NSW)* (POEO Act).

'Pollution' is relevantly defined in the POEO Act to include 'water pollution' and 'land pollution'.

The POEO Act defines 'water pollution' very broadly:

> *(a) placing in or on, or otherwise introducing into or onto, waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, so that the physical, chemical or biological condition of the waters is changed, or*

(b) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any refuse, litter, debris or other matter, whether solid or liquid or gaseous, so that the change in the condition of the waters or the refuse, litter, debris or other matter, either alone or together with any other refuse, litter, debris or matter present in the waters makes, or is likely to make, the waters unclean, noxious, poisonous or impure, detrimental to the health, safety, welfare or property of persons, undrinkable for farm animals, poisonous or harmful to aquatic life, animals, birds or fish in or around the waters or unsuitable for use in irrigation, or obstructs or interferes with, or is likely to obstruct or interfere with persons in the exercise or enjoyment of any right in relation to the waters, or

(c) placing in or on, or otherwise introducing into or onto, the waters (whether through an act or omission) any matter, whether solid, liquid or gaseous, that is of a prescribed nature, description or class or that does not comply with any standard prescribed in respect of that matter,

and, without affecting the generality of the foregoing, includes:

(d) placing any matter (whether solid, liquid or gaseous) in a position where:

(i) it falls, descends, is washed, is blown or percolates, or

(ii) it is likely to fall, descend, be washed, be blown or percolate,

into any waters, onto the dry bed of any waters, or into any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted, or

(e) placing any such matter on the dry bed of any waters, or in any drain, channel or gutter used or designed to receive or pass rainwater, floodwater or any water that is not polluted,

if the matter would, had it been placed in any waters, have polluted or have been likely to pollute those waters.

The POEO Act defines 'land pollution' to mean:

placing in or on, or otherwise introducing into or onto, the land (whether through an act or omission) any matter, whether solid, liquid or gaseous:

(a) that causes or is likely to cause degradation of the land, resulting in actual or potential harm to the health or safety of human beings, animals or other terrestrial life or ecosystems, or actual or potential loss or property damage, that is not trivial, or

(b) that is of a prescribed nature, description or class or that does not comply with any standard prescribed in respect of that matter,

but does not include placing in or on, or otherwise introducing into or onto, land any substance excluded from this definition by the regulations.

For the purpose of paragraph (b) of this definition, the regulations prescribe the following matters:

(a) hazardous waste,

(b) restricted solid waste,

(c) more than 10 tonnes of asbestos waste,

(d) more than 5 tonnes of waste tyres or more than 500 waste tyres.

Without limiting these definitions, this SAQP proposes that the presence of pollution at the TDS will be confirmed in:

Water (including groundwater): where is any level of concentration of a Potential Contaminant of Concern in water (including any groundwater) which may be above a background contamination for soil, groundwater, surface water, or sediment. The background level will need to be established for the project based on sampling of those areas likely to have no impact, or by other analysis of published data if it is not possible to establish a reliable background by collecting site data; and

Soil: where there is any level of concentration of a Potential Contaminant of Concern in soils which exceeds the HIL A level or HIL C.

10.4 Identification of Pre-Existing Contamination

The following criteria are to be employed to identify whether contamination identified in the program of field and laboratory works was present at 2 September 2014:

- Pre-Existing Contamination is associated with one or more sources that were present at 2 September 2014;
- Contamination that is not Pre-Existing Contamination is identified in areas where no leaks, spills, dumping etc. have taken place since 2 September 2014; and/or
- The chemical signature of the contamination indicates that contamination to be "aged" so that it was present prior to 2 September 2014.

11 Report Limitations

Report limitations which apply to this SAQP shall be the Standard limitations agreed with ES and included in the PSA as Schedule 9.

Limitations may need to up dated subject to approval of relevant parties as works progress.

12 References

Australian and New Zealand Environment and Conservation Council (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*

Douglas Partners (June 2008) *Geotechnical Investigation. Proposed Gas Storage Area. Proposed Power Station. Old Punt Road, Tomago. Prepared for Macquarie Generation. Project 39762.01.*

Environmental Strategies (12 June 2015) *Bayswater Power Station, Liddell Power Station, Lake Liddell and Tomago Sampling, Analysis and Quality Plan to Identify Pre-Existing Contamination. Reference 15092 RP01_SAQP_Rev2*

Environmental Strategies (September 2015) *Phase 1 Preliminary Site Investigation. 1902 and 1940 Pacific Highway, Tomago NSW 2322*

NEPC (2013) National Environmental Protection (Assessment of Site Contamination) Measure (NEPM) (2013) Schedule B (1) *Guideline on Investigation Levels for Soil and Groundwater*

NSW DEC (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*

12.1 Guidelines made by the NSW EPA

EPA (1995b) *Contaminated Sites: Sampling Design Guidelines*. NSW EPA, Sydney;

DEC (2006) *Contaminated Sites: Guidelines for the NSW Site Auditor Scheme – 2nd Edition*. NSW DEC, Sydney; and

DEC (2007) *Guidelines for the Assessment and Management of Groundwater Contamination*. NSW DEC, Sydney

DECC (2008) Waste Classification Guidelines. NSW DECC, Sydney

DECC (2009) *Contaminated Sites: Guidelines on the Duty to Report Contamination under the Contaminated Land Management Act 1997*. NSW DECC, Sydney.

OEH (2011) *Contaminated Sites: Guidelines for Consultants Reporting on Contaminated Sites*. NSW EPA, Sydney;

EPA (2012) *Guidelines for the Assessment and Management of Sites Impacted by Hazardous Ground Gases*, Sydney.

NSW EPA (2014) *Technical Note: Investigation of Service Station Sites*

12.2 Guidelines approved by the EPA

ANZECC/ARMCANZ (2000) *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*. Australian and New Zealand Environment and Conservation Council and Agriculture and Resource Management Council of Australia and New Zealand, Paper No 4, Canberra-includes Sediment Quality Guidelines;

ANZECC/NHMRC (1992) *Australian and New Zealand Guidelines for the Assessment and Management of Contaminated Sites*. Australian and New Zealand Environment and Conservation Council and the National Health and Medical Research Council, Canberra;

Department of Health and Ageing and EnHealth Council (2002) *Environmental Health Risk Assessment: Guidelines for Assessing Human Health Risks from Environmental Hazards*. Commonwealth of Australia, Canberra;

NEPC (1999) *National Environment Protection (Assessment of Site Contamination) Measure, Schedule A and Schedules B (1)-B (10).* National Environment Protection Council, Adelaide;

NEPC (2013) *National Environment Protection (Assessment of Site Contamination) Amendment Measure, Schedule A and Schedules B (1)-B (9).* National Environment Protection Council, Adelaide;

NHMRC, NRMMC (2011) *Australian Drinking Water Guidelines Paper 6 National Water Quality Management Strategy;* and

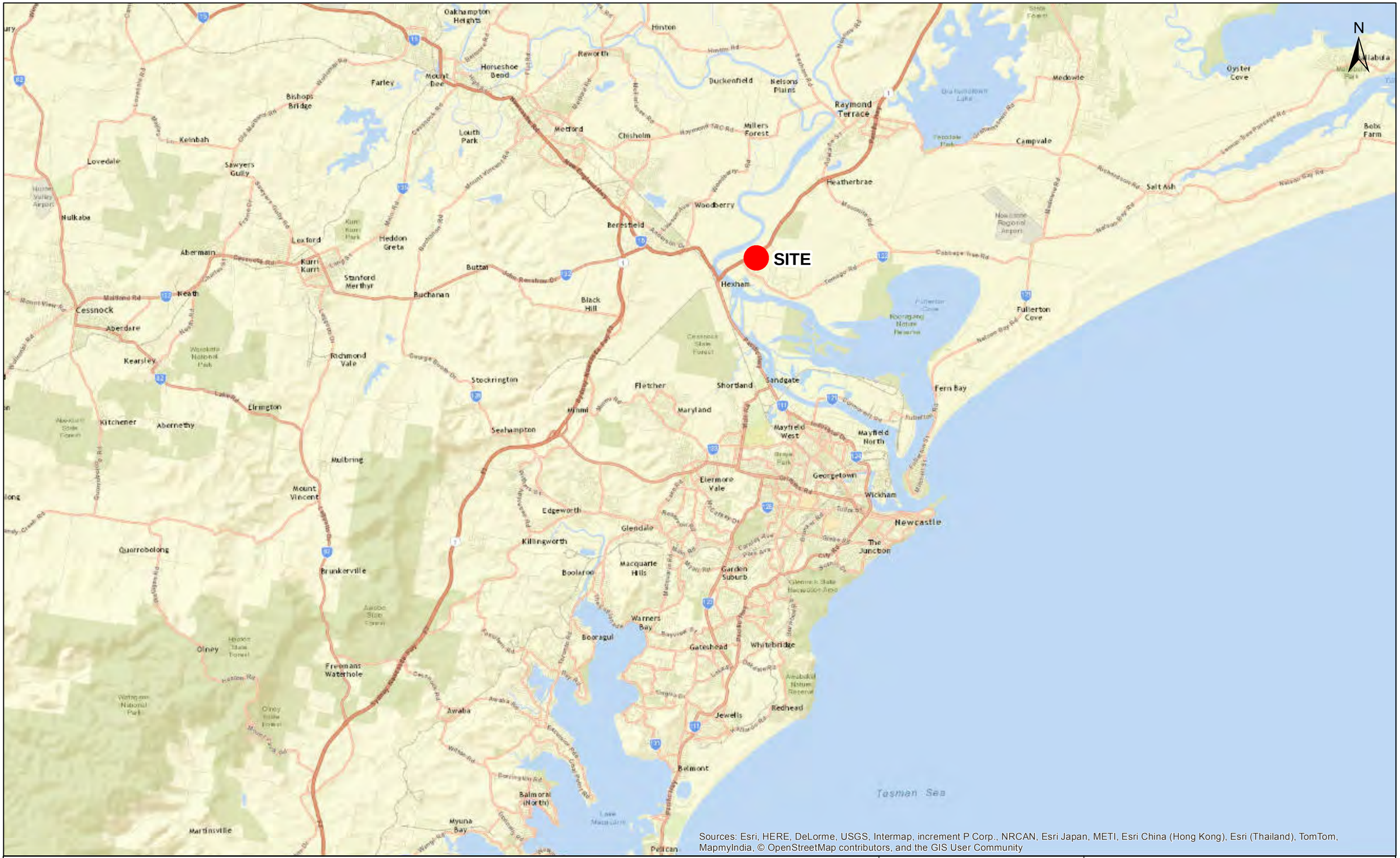
NSW OEH (2008) *Guidelines for Implementing the POEO (Underground Petroleum Storage Systems) Regulation 2008*. Dept. of Environment, Climate Change & Water – OEH NSW

NSW DECCW (2010) *UPSS Technical Note: Decommissioning, abandonment and removal of underground petroleum storage systems*.

NSW EPA (2014) *Technical Note: Investigation of Service Station Sites*

Appendix A: *Figures:*

- *Figure 1: Site Location*
- *Figure 2: Areas of Environmental Concern (AEC) 5-7*
- *Figure 3: AEC 1-4*
- *Figure 4: Sampling Locations (AEC 5-7)*
- *Figure 5: Sampling Locations (AEC 1-4)*
- *Figure 6 – Stockpiles encroaching TDS 2*



0 3 6 9
Kilometers

Client: AGLM

Drawing Number: 15107_Phase1_G003.mxd

Date: 30/09/2015

Drawn By: NP

Reviewed By: CW

Figure 1
Site Location

Phase 1 Preliminary Site Investigation – Tomago NSW

EnvironmentalStrategies
PROVIDING BENEFITS

LEGEND

- Site Boundary
- Refer to Figure 3 (AECs 1-4)
- AEC 5 - Dumped waste
- AEC 6 - Dam and Stockpiled material
- AEC 7 - Stockpiled material encroaching TDS property.

N

0 50 100 150
Metres

Client: AGLM	**Figure 2** **Areas of Environmental Concern** Tomago Supplementary SAQP
Drawing Number:	
Date: 20/10/2015	
Drawn By: RW	
Reviewed By: CW	

EnvironmentalStrategies
PROVIDING BENEFITS

LEGEND

- Site Boundary
- AEC 1 - Septic Tanks
- AEC 2 - Residential Compound
- AEC 3 - Abandonded Motor Vehicles
- AEC 4 - Stockpiled material / mounds

N

0 5 10 15
Metres

Client: AGLM

Drawing Number: 15107_Phase1_SAQP2

Date: 20/10/2015

Drawn By: RW

Reviewed By: CW

Figure 3
Areas of Environmental Concern
Tomago Supplementary SAQP

EnvironmentalStrategies
PROVIDING BENEFITS

LEGEND

- Site Boundary
- Refer to Figure 3 (AECs 1-4)
- AEC 5 - Dumped waste
- AEC 6 - Dam and Stockpiled material
- AEC 7 - Stockpiled material encroaching TDS property.
- Proposed groundwater monitoring well
- Proposed soil bore
- Proposed stockpile sample
- Proposed surface water sample
- Proposed sediment sample

N

0 50 100 150
Metres

Client: AGLM	**Figure 4**
Drawing Number:	**Proposed Sampling Locations**
Date: 20/10/2015	Tomago Supplementary SAQP
Drawn By: RW	
Reviewed By: CW	

EnvironmentalStrategies
PROVIDING BENEFITS

LEGEND

- Site Boundary
- AEC 1 - Septic Tanks
- AEC 2 - Residential Compound
- AEC 3 - Abandonded Motor Vehicles
- AEC 4 - Stockpiled material / mounds
- Proposed groundwater monitoring well
- Proposed soil bore
- Proposed stockpile sample

N

0 5 10 15
Metres

Client: AGLM

Drawing Number: 15107_Phase1_SAQP2

Date: 20/10/2015

Drawn By: RW

Reviewed By: CW

Figure 5
Proposed Sampling Locations
Tomago Supplementary SAQP

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PROVIDING BENEFITS

Saturday 19th June 2010:
AGLM Site: Highly vegetated across the majority of the site. The eastern boundary appears to have had some vegetation clearing.
Adjacent Site: No obvious stockpiles observed on the adjacent site.

Thursday 25th November 2010:
AGLM Site: No major changes observed.
Adjacent Site: Stockpiles (approximately 22 mounds covering an area of ~350m² appears on the AGLM boundary. Stockpiles do not appear to be on AGLM land.

Saturday 25th June 2011:
AGLM Site: No major changes observed.
Adjacent Site: The stockpiles observed in November 2010 aerial have grown in area from ~350m² to ~1,500m². Another section of stockpiles is observed south of the original, covering an area ~1,700m². These new stockpiles appear to encroach AGLM land.

Saturday 5th July 2014:
AGLM Site: No major changes observed.
Adjacent Site: The stockpiles appear to be covered in vegetation, with individual mounds unable to be identified.

Wednesday 6th May 2015:
AGLM Site: No major changes observed.
Adjacent Site: The stockpiles appear to be covered in vegetation, with individual mounds unable to be identified.

Thursday 16th July 2015: Phase I Site Walkover Images from AGLM adjacent site.
Photo 1: Stockpile comprised of concrete and building material.
Photo 2: Close up of stockpile showing potential ACM
Photo 3: Photo of stockpile covered in vegetation
Photo 4: Photo of multiple stockpiles covered in vegetation.

Legend

- Approximate AGLM Site Boundary
- Approximate footprint of stockpiles
- Approximate footprint of stockpiles covered in vegetation.

Client: AGLM	Figure 6 Stockpiles Encroaching TDS 2 Tomago Supplementary SAQP
Drawing Number: 15107_Phase1_G001	
Date: 20/10/2015	
Drawn By: RW	
Reviewed By: CW	

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PROVIDING BENEFITS

Appendix B: *Proposed Tomago Phase II Costings*

APPENDIX B

PRINCIPAL'S COST SCHEDULE 1 D. ADDITIONAL ENVIRONMENTAL INVESTIGATION - TOMAGO DEVELOPMENT SITE

Name of consultant	Environmental Strategies P/L							05-May-15
Item	No	Unit		Rate/unit ($)		Sub-total ($)		Sub-total for program ($)
1. Phase 1: Stage 1 Preliminary Site Investigation								
Undertake PSI, including all searches, interviews and site inspection by Project Manager	1	PSI	$	4,959.00	$	4,959.00		
Prepare draft report for review by Principal	1	draft	$	1,653.00	$	1,653.00		
Prepare final report	1	final	$	1,653.00	$	1,653.00		
Total for Stage 1 Preliminary Site Investigation							$	8,265.00
2. Phase 2: Stage 2 Detailed Site Investigation								
Preliminaries								
Prepare draft SAQP (Note 1)	1	draft	$	792.30	$	792.30		
Finalise SAQP incorporating Principal's comments	1	final	$	237.69	$	237.69		
Prepare draft HSP and EMP	1	draft	$	1,410.75	$	1,410.75		
Finalise HSP and EMP incorporating Principal's comments	1	final	$	423.23	$	423.23		
Services location (Note 2)	1		$	1,410.75	$	1,410.75		
Total for Preliminaries							$	4,274.72
Soil program								
Soil bores to shallowest of bedrock/natural soil or to 6 m (push tube or SPT)								
Bores and collection of soil/fill samples (Note 3)	10	bore	$	604.59	$	6,045.90		
PID screening of soil samples	20	test	NA		$			
Total for soil program							$	6,045.90
Test pits to natural or max. depth 3 m								
Install test pits and collection of soil/fill samples (Note 3)	10	test pit	$	1,133.21	$	11,332.10		
PID screening of soil samples	20	test	NA		$			
Total for soil program							$	11,332.10
Analysis of samples (including 1 QC sample)								
heavy metals and metalloids (Note 4)	44	sample	$	12.60	$	554.40		
TPH/BTEX	44	sample	$	26.25	$	1,155.00		
PAHs	44	sample	$	28.35	$	1,247.40		
VOCs	11	sample	$	57.75	$	635.25		
Salinity	11	sample	$	5.04	$	55.44		
Fluoride	44	sample	$	6.30	$	277.20		
SVOCs	11	sample	$	113.40	$	1,247.40		
Total for soil analyses							$	5,172.09
Groundwater program								
Groundwater monitoring wells								
Convert 10 soil bores to groundwater monitoring wells to max depth 6 m (Note 5)	10	well	$	583.14	$	5,831.40		
Collection of groundwater samples (Note 6)	10	sample	$	131.67	$	1,316.70		
Analysis of samples (including 1 QC sample)								

heavy metals and metalloids (Note 4)	12	sample	$	15.00	$	180.00		
TPH/BTEX	12	sample	$	28.80	$	345.60		
PAHs	2	sample	$	27.00	$	54.00		
VOCs	3	sample	$	55.00	$	165.00		
Salinity	12	sample	$	4.80	$	57.60		
Fluoride	12	sample	$	6.00	$	72.00		
SVOCs	3	sample	$	108.00	$	324.00		
Total for groundwater analyses							$	8,346.30
3. Reporting								
Preparation of weekly email report during the site investigation program	2	report	$	153.90	$	307.80		
Preparation of draft report, including QC, data assessment, drafting, etc.	1	draft	$	4,856.40	$	4,856.40		
Meeting to discuss results and draft report (Note 7)	2	hour	$	153.90	$	307.80		
Final report, including incorporating comments from Principal	1	final	$	758.10	$	758.10		
Total for reporting							$	6,230.10
4. Other fees/costs (Note 8)			$		$		$	
Surface Water Sampling								
Collection of surface water samples (note 11)	2	sample	$	203.00	$	405.99		
Analysis of samples (including 2 QC sample)								
Heavy metals and metalloids (Note 4)	4	sample	$	14.55	$	58.20		
TPH/BTEX	4	sample	$	27.94	$	111.74		
PAHs	4	sample	$	26.19	$	104.76		
VOCs	4	sample	$	55.00	$	220.00		
Total for surface water analysis							$	900.70
Sediment Sampling								
Collection of sediment samples (note 12)	1	sample		163.9846154	$	163.98		
Analysis of samples (including 2 QC sample)								
Heavy metals and metalloids (Note 4)	3	sample	$	12.60	$	37.80		
TPH/BTEX	3	sample	$	26.25	$	78.75		
PAHs	3	sample	$	28.35	$	85.05		
TOC	3	sample	$	25.00	$	75.00		
VOCs	3	sample	$	55.00	$	165.00		
Total for sediment analysis							$	605.58
Surface Soil Sampling								
Collection of surface soil samples (note 13)	15	sample	$	78.75	$	1,181.25		
Analysis of samples (including 2 QC sample)								
Lead	17	sample	$	10.47	$	177.91		
Asbestos	17	sample	$	80.50	$	1,368.50		
Fluoride	17	sample	$	6.30	$	107.10		
Total for surface soil analysis							$	2,834.76
Materials (i.e. ACM) analysis								
Collection of material samples (note 14)	9	sample	$	31.17	$	280.50		
Analysis of samples								
Lead	9	sample	$	10.47	$	94.19		
Asbestos	9	sample	$	80.50	$	724.50		
Total for Materials analysis							$	1,099.19

Stockpile Sampling								
Collection of stockpile samples (note 15)	7	sample	$	66.92	$	468.44		
Analysis of samples (including 2 QC sample)								
Heavy metals and metalloids (Note 4)	9	sample	$	12.60	$	113.40		
TPH/BTEX	9	sample	$	26.25	$	236.25		
PAHs	9	sample	$	28.35	$	255.15		
Asbestos	9	sample	$	80.50	$	724.50		
VOC	9	sample	$	55.00	$	495.00		
OCP	9	sample	$	30.11	$	270.99		
OP	9	sample	$	30.11	$	270.99		
PCB	9	sample	$	30.11	$	270.99		
Total for Stockpile Sampling							$	3,105.71
Additional Soil Bore Sample Analysis								
Analysis of samples (note 16)								
Faecal and Total Coliforms	18	sample	$	69.00	$	1,242.00		
E Coli	18	sample	$	34.50	$	621.00		
Asbestos	18	sample	$	80.50	$	1,449.00		
OCP	12	sample	$	30.11	$	361.32		
OP	12	sample	$	30.11	$	361.32		
PCB	30	sample	$	30.11	$	903.30		
Acid Sulphate Soils	10	sample	$	103.50	$	1,035.00		
Additional cost for Soil Bore sampling analysis							$	5,972.94
Additional Groundwater Sample Analysis								
Analysis of samples (note 17)								
Fluoride	12	sample	$	6.00	$	72.00		
Faecal and Total Coliforms	2	sample	$	69.00	$	138.00		
E Coli	2	sample	$	34.50	$	69.00		
OCP	12	sample	$	30.11	$	361.32		
OP	12	sample	$	30.11	$	361.32		
PCB	6	sample	$	30.11	$	180.66		
Additional cost for Groundwater sampling analysis							$	1,182.30
Additional Reporting								
Additional draft reporting time required for additional works	1	draft	$	1,760.00	$	1,760.00		
Additional time to complete Final report, including incorporating comments from Principal	1	Final	$	786.50	$	786.50		
Additional Costs for reporting							$	2,546.50
Total for Item 4 Other fee/Costs (exclusive of GST)							$	18,247.67
Total for Stage 2 Detailed Site Investigation (exclusive of GST)							$	41,401.21
Total for PSI and DSI (exclusive of GST)							$	67,913.88

Schedule of rates for personnel and equipment

Project director	$/hour	$	209.00	Meetings, etc.
Project director	$/day	$	1,567.50	On-site
Project manager	$/hour	$	148.50	Office, meetings, etc.
Project manager	$/day	$	1,113.75	On-site
Senior project scientist/engineer	$/hour	$	93.50	Office, meetings, etc.

Senior project scientist/engineer	$/day	$	701.25	On-site
Project scientist/engineer	$/hour	$	77.00	On-site
Project scientist/engineer	$/day	$	577.50	Office, reporting etc.
Rate for field crew/s lodging, travel time, meals, etc. (rate/day)	$/day	$	60.90	During Works
Rate for vehicle hire	$/day	$	99.75	During Works
Rate for sub-surface services location	$/day	$	94.50	During Works
Additional cost for installing wells to deeper than 6 mbgl	Additional metre	$	94.50	During Works
PPE	$/day	$	10.50	During Works
Other consumables (please list rate/unit)	$/day	NA		During Works
Rate for remobilisation (if required)	Lump sum	$	1,500.00	Rate / field crew

Notes

1. Including review of previous investigation (only brief geotechnical investigation known) and liaison with sub-contractors.
2. Including consultant's searches and presence on site during services location.
3. Assume 10 locations, 3 samples from each bore to be collected.
and screened using PID and including samples to be sent to laboratories under chain-of-custody documentation.
Includes establishment, drilling costs, services location, sampling, supervision by consultant, consumables and equipment hire charges.
Includes 2 field duplicate QC samples and 1 interlab duplicate QC sample.
4. Heavy metals (arsenic, cadmium, chromium (total), copper, lead, mercury (total), nickel and zinc)
5. Including all costs, such as time, materials, development.
6. Includes all costs, such as revisiting site, purging, measuring field parameters, collection of samples and
sending samples to laboratories under chain-of-custody documentation.
7. Allow 2 hours for Project Manager
8. List any other items and associated costs that the consultant believes are necessary to complete the
assessment program to achieve the objectives of the brief (i.e.. additional locations, additional analytes, etc…)
9. Locations to be agreed by the Principal (soil and groundwater) by review of draft SAQP.
Number and locations of bore, test pits and groundwater monitoring wells to be agreed by Principal after review of draft SAQP.
10. Claims can only be made for items completed. Additional items approved by the Principal are to be charged at rates listed above.
Items not completed are to be reduced by the rates listed above.
11. Calculated as per Liddell sampling rate
12. Calculated as per Liddell sampling rate
13. Based on 30 minutes per sample and consumable / rental equipment
14. Based on 20 minutes per sample (time only)
15. Based on 30 minutes per sample and consumable / Rental equipment (hand tools only)
16. These costs are additional to the **Soil program** costs listed above
17. These costs are additional to the **Groundwater program** costs listed above

APPENDIX M – Site Survey Plan

SURVEY INFORMATION

1. THE SURVEY IS ON GROUND MAP GRID OF AUSTRALIA (MGA). BASED ON SSM 28490 – E379293.565 N6369114.337

IMPORTANT NOTES

1. THE BOUNDARIES SHOWN ON THIS PLAN ARE BASED ON OUR FIELD SURVEY. TO FORMALISE THESE DIMENSIONS WE WOULD RECOMMEND THE PREPARATION OF A REDEFINITION PLAN, SUITABLE FOR LODGEMENT AND REGISTRATION AT THE DEPARTMENT OF LANDS.
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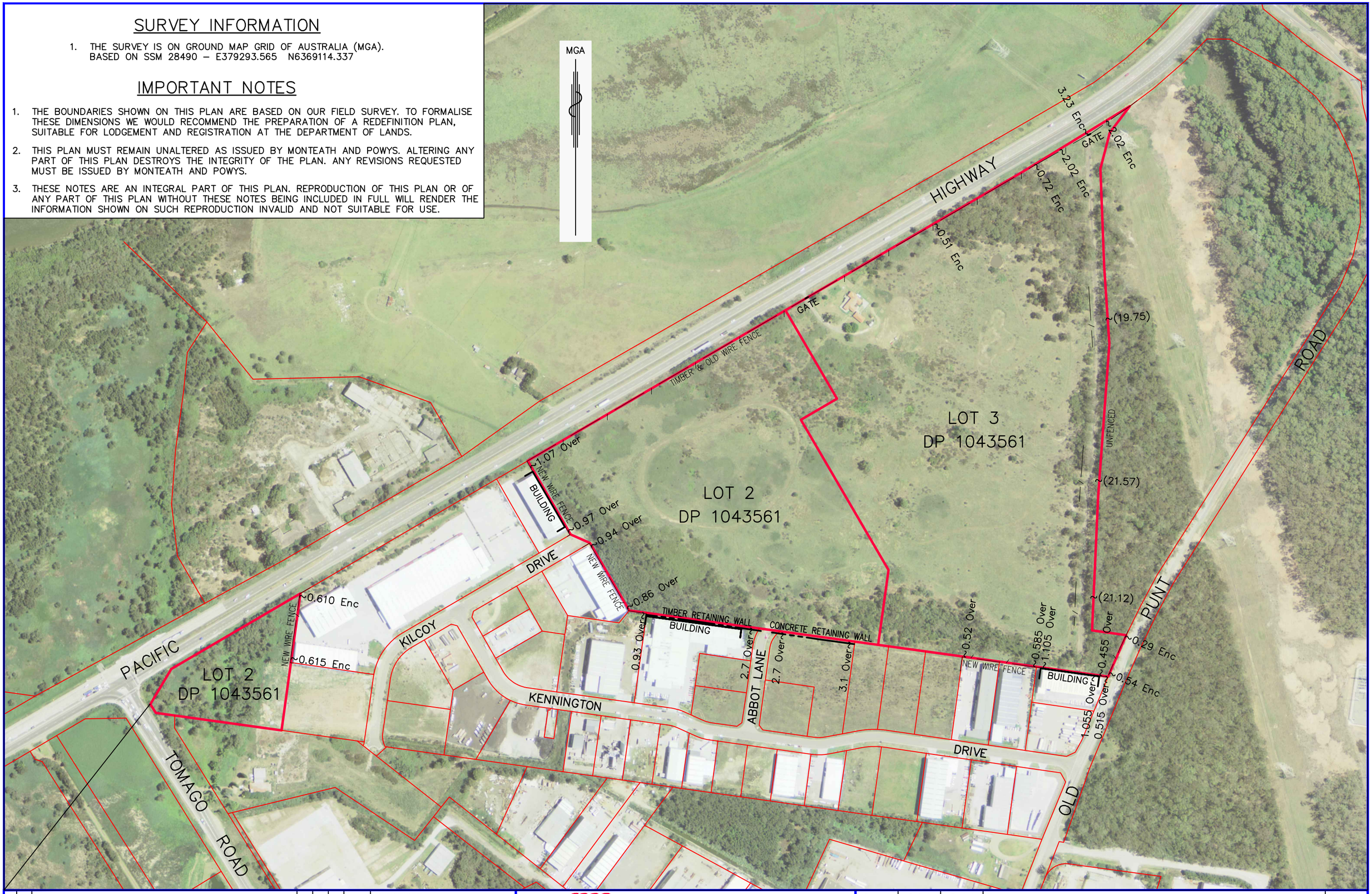

REVISIONS					
1	ISSUE TO CLIENT	JM	MAK	BJB	28/10/15
No	REVISION	SVY	DFT	CHK	DATE

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Surveyed	Drafted	Checked
JM	MAK	BJB

REGISTERED SURVEYOR

Scale @A3 : 1:4000 — Original Size A3

DO NOT SCALE

Client: **AGL ENERGY Ltd**

Title: **PLAN SHOWING OFFSETS TO STRUCTURES ON VARIOUS LOTS TOMAGO**

CAD File: 150469A_01 | Ref No: 15/0469 | Date: 28/10/2015

Sheet No. 1/1

Revision 1

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