



Phase 2 Acquisition Environmental Due Diligence Assessment

1 Sirius Road, Lane Cove West, NSW

Prepared for:
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Distribution

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Executive Summary

Introduction

Senversa Pty Ltd was engaged by Greenbox Architecture to undertake Phase 2 Acquisition Environmental Due Diligence Assessment (Phase 2) for 1 Sirius Road, Lane Cove West, NSW (the 'site'). Senversa understands that Greenbox is proposing redevelopment of the site to comprise a data centre.

Previous Investigations

The site is regulated by the NSW Environment Protection Authority (EPA) under the *Contaminated Land Management Act 1997* as the northern portion of the site was previously found to be impacted by contaminated fill material. It was remediated by capping the fill material with clay and a 'Notice Maintaining Remediation' (No.28027, 27 September 2005) was put in place on it by the EPA.

Senversa completed a Phase 1 Assessment (Phase 1) to refine the current understanding of the site and aid in assessing potential liabilities associated with site contamination. The Phase 1 identified the following potential sources of contamination:

- Historical landfilling of the site with uncontrolled fill of unknown origin.
- Potential burial of drums and other waste materials.
- Potentially impacted stockpiled materials of unknown origin.
- Potentially contaminating activities from surrounding industrial land use.

Following completion of the Phase 1 Assessment Senversa prepared a Sampling and Analysis Quality Plan (SAQP) to define the Data Quality Objectives (DQOs) and required methodology for undertaking the Phase 2 Investigation, including sampling, analysis and reporting requirements.

Objectives and Scope of Investigation

The primary objective of this investigation was to further assess potential sources of contamination identified at the site in the Senversa (2018) Phase 1. To achieve the objective Senversa completed the following scope of works in line with the Senversa (2018) SAQP:

- The collection of five surface samples from crushed gravel material imported for use within onsite access roads throughout the site.
- Collection of twenty samples from material stockpiled within the central portion of the site.
- Excavation of twenty test pits throughout the site to assess the potential distribution of fill material throughout the site.
- Installation of four groundwater / landfill gas monitoring wells to assess the potential for contamination arising from both potential onsite / offsite sources to be impacting the site.
- Sampling of groundwater and landfill gas from the newly installed wells.
- Preparation of this investigation report.

Results

Field observations made during investigation works identified fill materials within the following areas:

- Approximately 1000 m³ of illegally dumped materials in the central and northern parts of the site. It is the understanding of Senversa that the current site owner will be responsible for the classification and offsite disposal of all illegally dumped materials within the site.
- The central portion of the site within the vicinity of TP107 where fill materials were identified to a depth of approximately 1.0 m below ground level (bgl). Senversa identified sandstone outcrops in the central portion of the site, suggesting that fill materials seen in TP107 are likely to be isolated.
- The inferred capped area (subject of the NSW EPA maintenance order) was located within the northern portion of the site where a total of approximately 12,000 m³ of fill material was identified.
- Other fill material was observed in the south west of the site near TP101 and TP102.



Field observations made during the works did not identify any areas of staining / odours with the exception of isolated fill materials that appeared to be crystallised molasses located at a depth of approximately 1.5 m bgl within SB05 in the north west of the site near the former molasses tanks and at a depth of approximately 3.0 m bgl within SB03.

Field screening for landfill gases did not detect significant concentrations of the ground gas methane but potentially significant concentrations of carbon dioxide were detected.

Sandstone was found to be outcropping naturally in the central and northern portion of the site and as bedrock underlying fill materials in the majority of test pit / drilling locations.

Laboratory analysis of collected soil samples returned concentrations of contaminants of potential concern (CoPCs) less than the adopted assessment criteria with the exception of:

- Heavy metals (zinc, copper and nickel) exceeding ecological criteria in fill materials.
- Asbestos and hydrocarbons in fill materials located within illegally stockpiled surface materials and fill materials located within and adjacent to the inferred capped area.
- Laboratory analysis for ASS indicated the potential for ASS to be present. An Acid Sulphate Soil Management Plan will be required for the development.

Groundwater was identified at depths ranging from 4 m to 14 m below the surface and was inferred to be flowing in a north westerly direction towards the Lane Cove River.

Laboratory analysis of collected groundwater samples reported concentrations of all CoPCs less than the adopted health assessment criteria with the exception of the following:

- PFOS and sum of PFHxS and PFOS exceeded the ecological criteria in MW05 (in the central portion of the inferred capped area).
 - PFHxS concentrations also exceeded the adopted drinking water criteria in MW05. Senversa notes that the use of groundwater for drinking is unlikely.
- Heavy metals (copper, zinc and nickel) exceeded the adopted ecological assessment criteria in MW03, MW04 and MW05. Nickel exceeded the drinking water criteria in MW04.
- Ammonia exceeded the adopted ecological assessment criteria in MW03 and MW05 in the inferred capped area.

Conclusions and Recommendations

Fill materials within the capping area were found to be contaminated with asbestos containing materials (ACM) and require remediation prior to redevelopment. If remediation requires fill material to be disposed of offsite it should be pre-classified as 'Special Waste (Asbestos)' unless further testing indicates otherwise.

Senversa notes that fill materials within the remainder of the site will require additional sampling and analysis for waste classification purposes to facilitate potential offsite disposal. Information provided to Senversa indicates the development will likely involve the staged excavation and stockpiling of fill materials prior to disposal. It is the opinion of Senversa that waste classification may be undertaken at that time.

Potentially significant concentrations of the hazardous ground gas carbon dioxide were detected.

The approximate cost of removing the entirety of the fill material from the site would be in the region of \$7-9M (assuming 13,000 m³ – 15,000 m³ at a density of 1.8 and a cost to dispose, inclusive of testing, formal waste-classification, dig, haul and dispose of \$250-\$300/tonne).

Based on the results of this investigation Senversa considers that the site can be made suitable for the proposed development and recommends that a Remedial Action Plan (RAP) be developed. The RAP should detail the remedial processes and procedures needed to manage contamination identified in this investigation to facilitate development of the site. The following requirements should be adopted during and or prior to remediation:



- Specific requirements for any works that impact the portion of the site subject to the NSW EPA Notice Maintaining Remediation' (No.28027, 27 September 2005).
- Additional groundwater monitoring to assess identified PFAS within fill and groundwater within the vicinity of the inferred capped area.
- Additional ground gas monitoring to assess whether carbon dioxide issues may have a potentially significant impact on the development.
- An acid sulphate soils management plan.



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List of Acronyms

Acronym	Definition
ACM	Asbestos Containing Material
MHD	Australian Height Datum
AS	Australian Standard
ANZECC	Australian and New Zealand Environment and Conservation Council
BH	Borehole
BTEX	Benzene, Toluene, Ethylbenzene and Xylenes
COC	Chain of Custody
CoPC	Contaminant of Potential Concern
CSM	Conceptual Site Model
DO	Dissolved Oxygen
DQOs	Data Quality Objectives
DQIs	Data Quality Indicators
EC	Electrical Conductivity
EIL	Ecologically-Based Investigation Level
EPA	Environment Protection Authority
ESL	Ecological Screening Level
GME	Groundwater Monitoring Event
HIL	Health-Based Investigation Level
HSL	Health Screening Level
LFG	Landfill Gas
LOR	Limit of Reporting
m	Metre
m³	Cubic Metres
m AHD	Metres Australian Height Datum
m bgl	Metres Below Ground Level
m btoc	Metres Below Top of Casing
mg/kg	Milligrams per Kilogram
mg/L	Milligrams per Litre
MW	Monitoring Well
NATA	National Association of Testing Authorities



Acronym	Definition
NEPC	National Environment Protection Council
NEPM	National Environment Protection Measure
NHMRC	National Health and Medical Research Council
OCP	Organochlorine Pesticides
OPP	Organophosphorus Pesticides
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyls
PFAS	Per and Polyfluoroalkyl Substances
PID	Photo-Ionisation Detector
QA	Quality Assurance
QC	Quality Control
RPD	Relative Percentage Difference
SAQP	Sampling and Analytical Quality Plan
SPOCAS	Suspension Peroxide Oxidation – Combined Acidity and Sulphate
SVOC	Semi-Volatile Organic Compound
SWL	Standing Water Level
TRH	Total Recoverable Hydrocarbons
µg/kg	Micrograms per Kilogram
µg/L	Micrograms per Litre
VOC	Volatile Organic Compound



1.0 Introduction and Objectives

1.1 Introduction

Senversa Pty Ltd (Senversa) was engaged by Greenbox Architecture Pty Ltd (Greenbox) to undertake Phase 2 Acquisition Environmental Due Diligence Assessment (Phase 2) for 1 Sirius Road, Lane Cove West, NSW (the 'site').

The Phase 2 was undertaken to assess the potential distribution / extent of contamination in soil and groundwater identified on-site within the Senversa (2018) Phase 1 Acquisition Environmental Due Diligence Assessment (Phase1).

- The site location is shown on **Figure 1**, the current layout is shown on **Figure 2**.

1.2 Background

Senversa understands that Greenbox is proposing redevelopment of the site to comprise a data centre.

Senversa completed a Phase 1 Acquisition Environmental Due Diligence Assessment (Phase 1) to refine the current understanding of the site and aid in assessing potential liabilities associated with site contamination. The Phase 1 identified the following potential sources of contamination:

- Historical landfilling of the site with uncontrolled fill of unknown origin.
- Potential burial of drums and other waste materials.
- Potentially impacted stockpiled materials of unknown origin.
- Potentially contaminating activities from surrounding industrial land use.

The NSW EPA placed a number of constraints on the site via a 'Notice Maintaining Remediation' (No.28027, 27 September 2005). These included:

- *"The Environment Protection Authority... requires the recipient to maintain the following remediation actions in relation to the land:*
 - a) The recipient must obtain the prior written approval of the EPA to any works that are to be carried out on the land, whether or not the works are carried out by the recipient, for the purposes of:*
 - i. covering, dispersing or reducing the contamination of the land; or*
 - ii. restoring or rehabilitating the land; or*
 - iii. removing or disposing of any soil, sand, rock, water, or any other solid or liquid material of any kind from the land; and*
 - b) the recipient must maintain the land in a manner that maintains the integrity and impermeability of the clay capping which is on the land, including selection of vegetation with root systems that do not grow into the clay capping layer; and*
 - c) the recipient must not undertake any work, or cause, permit or allow the undertaking of any work which would result in any disturbance to, or modification of the clay capping layer unless the prior written approval of the undertaking has been obtained from the EPA and the work is undertaken in accordance with any conditions of that approval."*
- *Failure to comply with these conditions would be an offence.*
- *Pursuant to action (b) of the above, the site appears to have been clay capped at some point in the past. The extent, integrity and details of the cap are unknown."*

Also *"At least 30 days prior to the recipient selling, transferring, leasing or otherwise relinquishing ownership or occupation of the land or any part of the land, the recipient must give written notification of this to the EPA and of the name and contract details of the prospective owner or occupier."*



Senversa prepared a Sampling and Analysis Quality Plan (SAQP) (Senversa 2018) that outlined the scope of proposed works, how the data would be collected and what were the data quality objectives. This investigation was undertaken in accordance with the requirements outlined within the Senversa (2018) SAQP.

1.3 Project Objectives

The primary objective of this investigation was therefore to further assess potential sources of contamination at the site identified in the Senversa (2018) Phase 1 (**Section 2.3**).

- The Phase 2 also aimed to provide preliminary estimates of fill volumes within the site and associated approximate costs for potential offsite disposal.

1.4 Scope of Works

To achieve the objective outlined above, Senversa completed the following scope of works in general accordance with the requirements detailed within the Senversa (2018) SAQP:

- The collection of five (5) surface samples from crushed gravel material imported for use within onsite access roads throughout the site.
- Collection of twenty (20) samples from material stockpiled within the central portion of the site.
- Excavation of twenty (20) test pits throughout the site to assess the potential distribution of fill material throughout the site.
- Installation of four (4) groundwater / landfill gas monitoring wells to assess the potential for contamination arising from both potential onsite / offsite sources to be impacting the site.
- Undertake sampling of groundwater and landfill gas from the newly installed wells.
- Preparation of this investigation report.

1.4.1 SAQP Non-Conformances

Senversa notes the following non-conformances with the Senversa (2018) SAQP.

Item	Reason for Non-Conformance	Comment
Depth of test pits	• The Senversa (2018) specified that test pits would be excavated to a depth of 3.0 m bgl throughout the site. Due to the occurrence of bedrock, several test pits were terminated at depths of less than 3.0 m bgl.	• The primary aim of test pitting works was to assess the vertical and lateral extent of fill materials within the site as such termination of test pits on bedrock does not affect the overall objective of works.
Number of groundwater wells / soil bores	• The Senversa (2018) SAQP stated that five groundwater wells would be installed within the site. Due to the topography / inaccessibility of the south western portion of the site groundwater well MW02 was not installed.	• Due to the shallow nature of fill materials and laboratory analysis of soil data returning concentrations of CoPCs less than LOR and or the adopted assessment criteria in this portion of the site Senversa considers that this non-conformance is not significant. • Where contamination is migrating from offsite it is the opinion of Senversa that monitoring well MW01 is reasonably positioned to assess onsite migration. As such, Senversa considers that this non-conformance does not affect the overall objectives of the investigation or the reliability of the collected data set.



1.5 Regulatory Requirements

This investigation has been undertaken in accordance with relevant elements of the following guidelines and standards:

- ANZAST (2018). *Australian and New Zealand Guidelines for Fresh and Marine Water Quality*.
- Australian Standard (2005). *AS 4482.1 2005, Guide to the Investigation and Sampling of Sites with Potentially Contaminated Soil, Part 2: Non-volatile and Semi-volatile compounds*.
- Australian Standard (1999). *AS 4482.2 1999, Guide to the Sampling and Investigation of Potentially Contaminated Soil, Part 2: Volatile Substances*.
- National Health and Medical Research Council (2011). *Australian Drinking Water Guidelines ADWG* [updated August 2018].
- Heads of Environment Protection Authority (2018). *PFAS National Environmental Management Plan*. This is hereafter referred to as 'the NEMP, 2018'.
- National Environment Protection Council (2013). *National Environment Protection (Assessment of Site Contamination) Amendment Measure (No.1)*. This is hereafter referred to as 'the NEPM, 2013'.
- National Health and Medical Research Council/National Resource Management Ministerial Council, Commonwealth of Australia, Canberra (2011). *Australian drinking water guidelines paper 6 national water quality management strategy*.
- NSW Environment Protection Authority (1995). *Sampling Design Guidelines*.
- NSW Environment Protection Authority (2017). *Guidelines for the NSW Site Auditor Scheme (3rd edition)*.
- NSW Office of Environment and Heritage (2011). *Guidelines for Consultants Reporting on Contaminated Sites*.
- WA Department of Health (2009). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*.



2.0 Site Background

2.1 Site Setting

The site identification information is presented within **Table 2-1**:

Table 2-1: Site Information

Item	Description
Site Address	1 Sirius Road, Lane Cove West, NSW
Legal Description	Lot 1 in DP 1551370
Site Area	Approximately 4.0 hectares
Site Elevation (m AHD)	Ranging between approximately 2 - 34 m AHD
Site Location	Figure 1
Site Layout	Figure 2

2.2 Environmental Site Setting

A detailed description of the site setting is provided within **Section 3.0** of the Senversa (2018) Phase 1 and a summary is presented below.

A review of geological / soil landscape databases indicates that the site is situated on Triassic Hawkesbury Sandstone of the Mesozoic era. It is described as medium to coarse grained quartz sandstone with very minor shale and laminate lenses. Previous investigations undertaken at the site identified lithology to generally comprise: shallow fill materials overlying shale/siltstone and weathered sandstone.

While groundwater was not encountered during previous investigations, based on information reviewed as part of the Senversa 2018 Phase 1, Senversa considers that groundwater is likely to be present at the soil / bedrock interface or within underlying fractured bedrock.

No surface water was observed onsite. However, Lane Cove River and Stringybark Creek are located immediately adjacent the site to the west and north respectively (see **Figure 2**).

At the time of the Phase 1 the land uses surrounding the site were as follows:

- **North:** Pumphouse Lane Cove bushwalk, and adjacent bushland is located on the northern boundary of the site followed by Stringybark Creek (a tributary to the Lane Cove River) runs parallel to the northern boundary of the site. A Meriton hotel is located approximately 400 m north of the site followed by Epping Road then low-density residential dwellings and commercial / industrial office park facilities.
- **East:** Sirius Road is located on the eastern boundary of the site followed by commercial industrial development (Symbio Laboratories Sydney, Plastic Tooling Manufacturing, Alto Hyundai Service Centre, Concise Bodyworks, HMA POGC Sensor Technology and SC Johnson & Sons Pty Ltd) then low density residential / undeveloped bushland.
- **South:** the southwest of the site bordering the Lane Cove River is undeveloped bushland. Directly south and to the southeast industrial use (Kanes Hire Pty Ltd, Definitive Car Detailing, Road Runner Mobile Tyres, Combined Towing Services NSW and Ausgrid Lane Cove).
- **West:** bushland and the Lane Cove River borders the site to the west. Beyond this is the Boobajool Reserve, Gwandalan Reserve and Magdala Park.



2.3 Summary of Previous Investigations

In developing this report, Senversa reviewed information presented in the following previous reports:

- Senversa (2018), Phase 1 Acquisition Environmental Due Diligence Assessment, Sirius Road, Lane Cove West, NSW, 18 October 2018 (Senversa 2018a).
- Senversa (2018), Sampling and Analysis Quality Plan, Sirius Road, Lane Cove West, NSW, 25 October 2018 (Senversa 2018b).

In developing Senversa (2018a) the following previous documents were reviewed:

- NSW EPA Notice Maintaining Remediation (No.28027, 27 September 2005) (NSW EPA 2005).
- Environmental Investigations Australia (EIA) 2006, Environmental Site Assessment, 1 Sirius Road, Lane Cove, NSW, 3 July 2006. (EIA 2006).
- EIA (2007), Remedial Action Plan, 1 Sirius Road, Lane Cove, NSW, 31 January 2007. (EIA 2007).

A summary of these previous investigations is presented within **Section 3.2.10** of Senversa (2018a).

We note that the following previous investigations have been also undertaken at the site but have not been provided to us. Senversa has relied on summaries of these reports in EIA 2006 and EIA 2007.

- Dames and Moore (1991) Letter report Geotechnical Investigation, Lane Cove Site D&M Ref NKN-dsk3.
- Golden Mackay Pty Ltd (1991) Land at Lane Cove Historical and Archaeological Assessment (April 1991).
- Dames and Moore (1991) Environmental Survey, Lane Cove Substation for Electricity Commission of NSW D&M Ref 13503-027-70.
- Dames and Moore (1993) Additional Sampling and Biota Sampling, Sirius Road, Lane Cove for Pacific Power.
- Pacific Power Services (1994) Remediation of Lot 1, Sirius Road, Lane Cove – Technical Specifications of Proposed Works.
- Pacific Power International – Environmental Services (August 1999) Lane Cove Site: Assessment of Iron Sulfate Seepage from Contaminated Area (August 1999).
- Dames and Moore (2000) Letter Report, Additional Testing to Assess Risk of Harm, Lot 1 Sirius Road D&M Ref 13503-042-371.

Senversa (2018a)

Senversa was engaged to prepare a Phase 1 Acquisition Environmental Due Diligence Assessment (Phase 1) to assess potential constraints / liabilities associated with site contamination that require consideration during re-development of the site as a data centre.

The investigation identified a number of potentially complete pollutant linkages at the site resulting from:

- Historical landfilling of the site with uncontrolled fill of unknown origin.
- Potential burial of drums and other waste materials.
- Potentially impacted stockpiled materials of unknown origin.
- Potentially contaminating activities from surrounding industrial land use.

Based on the information reviewed as part of the Phase 1 Investigation, it was recommended that additional investigation should be undertaken to assess the contamination status of the site and further inform potential liabilities/constraints associated with site contamination that may impact the proposed development.

It is also noted that prior to the commencement of any intrusive works within the portion of the site subject to the NSW EPA maintenance order, approval from the EPA will be required prior to any disturbance of the capping layer.



Senversa (2018b)

Senversa was engaged to prepare a SAQP for the Phase 2 Investigation. The objectives of the SAQP were to define the Data Quality Objectives (DQOs) and required methodology for undertaking the Phase 2 Investigation including sampling, analytical and reporting requirements.

The SAQP included a review of previous investigations, refinement of the preliminary CSM presented within the Senversa (2018) Phase 1 and development of DQOs and field investigation methodologies for the completion of this Phase 2 Investigation.



3.0 Preliminary Conceptual Site Model

3.1 Potential Sources of Contamination

Senversa (2018) identified the following Contaminants of Potential Concern (CoPC) associated with current and historical land uses undertake within the site and surrounding areas:

Potential Source	Contaminants of Potential Concern
On-Site Potential Source 1 – Historical site uses / Fill material of unknown origin, including buried drums, acid containers etc.	Acid sulphate soils (ASS), asbestos, organochlorine and organophosphorus pesticides (OCP / OPP), total recoverable hydrocarbons (TRH); semi / volatile organic compounds (SVOC / VOC), chlorinated solvents (trichloroethene (TCE) and tetrachloroethene (PCE)), benzene, toluene, ethylbenzene and xylenes (BTEX); heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel and zinc); polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), nutrients, phthalates and per and polyfluoroalkyl substances (PFAS). Landfill gas (predominantly methane and carbon dioxide).
Potential Source 2 – Stockpiled soil of unknown origin.	TRH, BTEX, PAH, PCBs, OCP / OPP heavy metals and asbestos.
Off-Site Potential Source 3: Current and historical surrounding commercial / industrial land uses	ASS, PFAS, PCBs, TRH, BTEX, VOCs, heavy metals and pesticides (OCP / OPP).

3.2 Potential Pathways

The primary potential exposure pathways of concern at the site are:

- Inhalation of vapour (from soil and/or groundwater) and contaminated dust (from soils).
- Dermal contact and/or incidental ingestion with contaminated soils.
- Transport of contamination through surface water flows.
- Transport of contamination to underlying groundwater aquifers.
- Transport of contaminants through mechanical transport.

3.3 Potential Receptors

Key receptors have been identified as:

- Future site users.
- Workers carrying out the development of the site (short term).
- Groundwater beneath the site.
- Adjacent sensitive receptors e.g. Lane Cove River and Stringybark Creek.



4.0 Data Quality Objectives

Based on the results of previous investigations (Senversa, 2018a) and with reference to the CSM outlined above Senversa developed the following data quality objectives (DQOs) for this investigation.

The DQOs have been developed in accordance with the NEPM, 2013 and the Australian Standard AS4482.1 *Guide to the Sampling and Investigation of Potentially Contaminated Soil*.

4.1 Step 1 – State the Problem

Senversa (2018a) identified a range of potentially contaminating historical land uses / activities at the site and surrounding area, as such Greenbox required a Phase 2 to be undertaken to assess the potential for widespread contamination to be present at the site to identify any potential limitations to the proposed development.

The Phase 2 also aimed to provide preliminary estimates of fill volumes within the site and associated approximate costs for potential offsite disposal.

4.2 Step 2 – Identify the Decisions

Based the objectives of this Phase 2 the decisions required to meet the objectives were adopted within the SAQP (Senversa, 2018b):

- Are there any potential unacceptable risks to human health and / or ecological receptors from contaminants in fill / soil / landfill gas and / or groundwater?
- Is there any evidence of, or potential for, migration of contaminants from the site?
- Is there any evidence of, or potential for, off-site migration of contaminants to the site?
- Is there sufficient information on the distribution and characteristics of contaminated media across the site to evaluate risk of harm to human health or the environment and whether off-site migration of contamination may have occurred?
- Is there enough information to form an estimation of fill material volumes?
- Is management or remediation of contamination, if identified, required?
- Is there sufficient information on the distribution and characteristics of contaminated media across the site to develop a Remediation Action Plan or Site Management Plan to (where necessary) remediate and / or manage site contamination?

4.3 Step 3 – Identify Information Inputs

The inputs to make the above decisions include:

- Information obtained during review of previous investigations.
- Information relating to the environmental setting of the site and surrounding area obtained during preparation of the Senversa (2018) Phase 1.
- Field observations made during intrusive investigation works.
- Laboratory analytical data of collected soil, soil vapour and groundwater samples.
- Field measurements collected during intrusive investigation and groundwater monitoring rounds.
- Screening-level assessment criteria from guidelines made or approved by the NSW EPA.



4.4 Step 4 – Define the Study Boundaries

The boundaries of the investigation are identified as follows:

- **Spatial boundaries** – the investigation is limited to the site boundaries as illustrated within Figure 1 and the maximum depth of investigation at each location detailed within section 5.0 of the SAQP (Senversa, 2018b).
- **Temporal boundaries** – the temporal boundary is limited to the data collected during these investigation works. As such, seasonality will not be assessed at this stage.
- **Constraints within the study boundaries** – the following are limitations of the sampling strategy for the site requiring consideration:
 - NSW EPA maintenance order requirements relating to disturbance of the capping layer etc.
 - Access restrictions associated with site topography and vegetation.
 - Possible presence of underground utilities.
 - Presence of heterogeneous material that may require specific sampling methods.
 - Presence of potential contaminants outside of the identified area of environmental concern.

Proposed sample locations have been selected taking into consideration the above factors.

4.5 Step 5 – Develop the Decision Rules

The decision rules adopted for this investigation are detailed within **Table 4-5** below.

Table 4-5: Decision Rules

Decision Required to be Made	Decision Rule
Are the data sufficient to address the objectives of the investigation?	• Do the collected data indicate the potential for significant and widespread contamination arising from key potential sources identified within Section 3 and subject to this investigation? • Do field observations (including visual, olfactory, presence of anthropogenic materials in fill) indicate potential significant contamination at the investigation locations? • Do results of landfill gas screening indicate an unacceptable risk from landfill gases or the requirement for further quantitative assessment. • Do analytical data exceed adopted screening-level assessment criteria? • Is there sufficient information to estimate the volume of fill material contained onsite? • Have any additional areas of potential environmental concern been identified within investigations works?
Are the data generated by sampling and analysis of an acceptable quality?	• Have the data collected been subjected to an assessment of quality assurance/quality control and found to be suitable for use in this assessment?
Does the site contain soil/groundwater and/or soil vapour impacted by contamination resulting from historical land uses?	• Collected soil; groundwater; and soil vapour samples are to be analysed for CoPCs associated with current and historical land uses practices and results compared to relevant NSW EPA endorsed regulatory guideline criteria.
Is there evidence of significant widespread contamination?	• Collection of soil; groundwater; and soil vapour samples during site investigation works.
Is additional information required to determine the potential liabilities/constraints associated with the proposed development?	• If it is determined that additional information is required to further reduce the uncertainties associated with the distribution and characterisation of soil/groundwater and/or soil vapour contamination, then appropriate recommendations for further assessment and/or investigation (including for assessment of potential risks) will be provided.



4.6 Step 6 – Specify Limits of Decision Error

This step establishes the decision maker's tolerable limits on decision errors, which provide performance goals for limiting uncertainty in the data. Data generated during this project must be appropriate to allow decisions to be made with confidence.

Specific limits for this project have been adopted in accordance with the appropriate guidance from the NEPM, 2013, appropriate data quality indicators (DQIs) used to assess data quality assurance / quality control (QA / QC) and standard Senversa procedures for field sampling and sample handling.

To assess the usability of the data prior to making decisions, the data will be assessed against pre-determined DQIs for precision, accuracy, representativeness, comparability and completeness.

The pre-determined DQIs established for the project are discussed below in relation to precision, accuracy, representativeness, comparability, completeness and sensitivity.

- **Precision** – measures the reproducibility of measurements under a given set of conditions. The precision of the laboratory data and sampling techniques is assessed by calculating the Relative Percent Difference (RPD) of duplicate samples.
- **Accuracy** – measures the bias in a measurement system. The accuracy of the laboratory data that are generated during this project is a measure of the closeness of the analytical results obtained by a method to the 'true' value. Accuracy is assessed by reference to the analytical results of laboratory control samples, laboratory spikes and analyses against reference standards.
- **Representativeness** – expresses the degree with which sample data accurately and precisely represent a characteristic of a population or an environmental condition. Representativeness is achieved by collecting samples on a representative basis across the site, and by using an adequate number of sample locations to characterise the site to the required accuracy.
- **Comparability** – expresses the confidence with which one data set can be compared with another. This is achieved through maintaining a level of consistency in sampling techniques, analytical techniques and reporting methods.
- **Completeness** – is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is set at there being sufficient valid data generated during the study.
- **Sensitivity** – expresses the appropriateness of the chosen laboratory methods, including the limits of reporting, in producing reliable data in relation to the adopted assessment criteria.

If any of the DQIs are not met, further assessment will be necessary to assess whether the non-conformance will significantly affect the usefulness of the data. Corrective actions may include requesting further information from samplers and/or analytical laboratories, downgrading of the quality of the data or alternatively, re-collection of the data. DQIs are detailed within **Table 4-6** below.

**Table 4-6: Data Quality Indicators**

Data Quality Objectives	Frequency	Data Quality Indicator
Precision		
Blind duplicates (intra laboratory)	1/20 samples (or 1/10 for Per- and poly-fluoroalkyl substances (PFAS))	<30% RPD where result is >10 times LOR
Blind duplicates (inter laboratory)	1/20 samples (or 1/10 for PFAS)	<30% RPD where result is >10 times LOR
Accuracy		
Surrogate spikes	All organic samples	70-130%
Laboratory control samples	1 per lab batch	70-130%
Matrix spikes	1 per lab batch	70-130% Lower recoveries may be acceptable for OCPs, OPPs, PCBs and phenols and will be assessed according to USEPA protocols.
Representativeness		
Sampling appropriate for media and analytes	NA	NA
Samples extracted and analysed within holding times.	NA	organics (14 days), inorganics (6 months)
Rinsate blank	1 per day where non-dedicated equipment is used. Samples are to be analysed for all CoPCs other than asbestos.	<LOR
Trip spike	1 per lab batch (BTEX only)	70-130%
Method blank / field blank	1 per lab batch	<LOR
Comparability		
Senversa standard operating procedures for sample collection & handling	All samples	All samples
NATA* accredited analytical methods used for all analyses	All samples	All samples
Consistent field conditions, sampling staff and laboratory analysis	All samples	All samples
Completeness		
Sample description and Chain of Custodies completed and appropriate	All samples	All samples
Appropriate documentation	All samples	All samples
Satisfactory frequency and result for QC samples	All QA / QC samples	-
Data from critical samples is considered valid	NA	Critical samples valid
Sensitivity		
Limits of reporting appropriate and consistent	All samples	All samples

*National Association of Testing Authorities



4.7 Step 7 Optimise the Design for Obtaining Data

Various strategies for developing a statistically based sampling plan are identified in the NEPM 2013 and NSW EPA (1995), including judgemental; random; systematic and stratified sampling patterns.

Based on historical land uses and site setting information identified within Senversa (2018a), a systematic and targeted sampling program was developed to characterise the potential sources of contamination within the site. The sampling rationale strategy adopted are described in Section 4.7 of Senversa (2018b).



5.0 Sampling Methodology and Analysis

Senversa field methods were undertaken in general accordance with Senversa (2018b) and relevant parts of national and state guidelines.

The fieldworks were undertaken by Alicia Cronly, Roxanne McKinnon and Michelle Damasio all suitably qualified Senversa environmental scientists appropriately trained and experienced in conducting environmental investigations.

- Sampling locations are illustrated on **Figure 3**.

5.1 Soil Investigation

The soil assessment methodology is presented in the table below.

Item	Description
Service Location	• Prior to the commencement of intrusive works, the proposed investigation locations were cleared via an experienced underground utility locator with radio detection equipment. A review of available service plans, including Dial Before You Dig and client supplied site plans, was also completed.
Surface Material and Stockpile Sampling	• Five surface samples (SS1 – SS5) were collected from imported crushed concrete materials utilised for access driveways. • A total of 20 samples (SP1 – SP20) were collected from illegally dumped soil materials stockpiled within the site. Five samples from each of the four material types within stockpiles (fill, clay and two crushed rock types) were collected.
Intrusive Works	• 20 test pits were excavated across the site using an 8-tonne excavator to a maximum depth of 4 m bgl. • Four soil bores (MW01, MW03, MW04 and MW05) were excavated via a track mounted drill rig to depths ranging from 5.0 m bgl to 16.8 m bgl • Senversa notes that MW01A was terminated at a depth of approximately 0.8 m bgl due to refusal on a concrete structure. • Soil bores MW01, MW03, MW04 and MW05 were subsequently converted to landfill gas / groundwater monitoring wells.
Excavation of Test Pits	• 20 test pits were excavated across the site using an 8-tonne excavator to a maximum depth of 4 m bgl. • All test pits were visually inspected to assess the potential composition and extent of fill materials beneath the site. Up to three samples were collected in fill and natural materials from 12 of the 20 test pit locations. • Samples were collected using a gloved hand from the middle of the excavator bucket to provide as undisturbed sample as possible. • Samples were selected for analysis based on visual and olfactory indicators of contamination and to ensure a good vertical, lithological and horizontal spread across the site. • Test pits were re-instated with excavated materials and as the cap is regulated by the EPA, test pits were compacted via a hydraulic compactor upon completion of works.
Field Screening	• For each primary sample taken, a secondary soil sample was placed in a zip lock bag and screened in the field for head space vapours (principally, volatile organic compounds (VOCs) but may also include some volatile inorganic compounds) using a calibrated photo-ionisation detector (PID). The sensor bulb used in the PID had an ionisation potential (IP) of 10.6 eV. • Field screening results are presented in bore logs in Appendix B.
Soil Logging	• Soil logging was conducted by a suitably qualified and experienced Senversa environmental scientist in general accordance with the Unified Soil Classification System and Senversa standard field procedures. Samples were logged, and the following information was recorded in the field: soil/rock type, colour, grain size, sorting, angularity, inclusions, moisture conditions, staining and odour. • Bore logs are presented in Appendix B.



Item	Description
Soil Sampling	- Soil samples from test pits were collected from the centre of the excavator bucket via gloved hand. - Soil samples from soil bores were collected from fill materials at each investigation location as grab samples recovered from the hand auger head. Samples of underlying natural materials were collected from arisings during air rotary drilling. Senversa notes that samples collected via air rotary / hammering may not be representative of overall conditions due to the potential loss of volatile and semi-volatile compounds but may be used for screening purposes. - All sampling was conducted using disposable nitrile gloves and samples were packed into appropriately labelled, clean screw cap jars (with Teflon-lined lids) supplied by the analytical laboratory. Samples were collected with minimal headspace remaining in the jar to minimise the potential loss of volatile CoPCs during sampling and transport. Samples were transferred to the laboratory and analysed under chain of custody control.
QC Samples	Quality control samples were collected in line with the DQOs and DQIs presented above in Section 4.6.
Decontamination	Decontamination of non-dedicated sampling equipment was undertaken in accordance with Senversa's Standard Decontamination Procedures.

5.2 Groundwater Investigation

The groundwater assessment methodology is presented in the table below.

Item	Description
Well Construction	- Groundwater monitoring wells MW01, MW03, MW04 and MW05 and combined groundwater/landfill gas monitoring wells were constructed using 50 mm outside diameter blank riser and machine threaded and slotted (0.5 mm) Class 18 uPVC casing. - To enable assessment of potential land fill gas and groundwater, wells were screened over 3-5 m from the maximum depth of excavation. - Senversa notes that MW03 was screened over two intervals (0 m bgl – 2 m bgl and 3.5 m - 6.5 m bgl) to avoid cross contamination from water observed in fill material.
Well Development	Following installation, the wells were developed using development pumps until the wells were dry. Purge water was collected within 10 L drums and suitably disposed of onsite.
Well Gauging	- Groundwater monitoring wells were gauged on 13th November 2018. Standing water levels (SWLs) were measured using an electronic oil/water interface probe capable of detecting phase separated hydrocarbons (PSH) such as light non-aqueous phase liquids (LNAPL). - The measurements were taken as close in succession as possible to minimise temporal differences in the SWLs.
Groundwater Sampling	- Groundwater samples were collected using peristaltic low flow sampling techniques. Purged water was passed through a low-flow cell until the stabilisation of physio-chemical parameters, including dissolved. - Dissolved oxygen (DO), pH, electrical conductivity (EC), redox potential and temperature. - It should be noted that measurements were taken <i>ex-situ</i> for geochemical parameter stabilisation reading purposes, and parameters, like DO, that are sensitive to atmospheric exposure therefore may not be entirely representative of <i>in-situ</i> groundwater conditions within the aquifer. - Groundwater samples collected for dissolved metals analysis were filtered using 0.45 µm Stericup filters in the field prior to transferring to the sample container. - Samples were packed into appropriate sample containers supplied by the analytical laboratory. - Samples were transferred to the laboratory and analysed under chain of custody control. - Calibration records for the water quality meter and interface probe are provided in Appendix D. Groundwater sampling field sheets are provided in Appendix E.



Item	Description
QC Samples	Quality control samples were collected in line with the DQOs and DQIs presented above in Section 4.6.
Decontamination	Decontamination of non-dedicated sampling equipment was undertaken in accordance with Senversa's Standard Decontamination Procedures.

5.3 Landfill Gas

The landfill gas screening methodology is presented within the table below.

Item	Description
Installation	- Landfill gas monitoring wells MW03 and MW05 were installed in the northern portion of the site within the landfilled area to assess the potential for landfill gas impact. - The landfill gas well was constructed using 50 mm outside diameter blank riser and machine threaded and slotted (0.5 mm) Class 18 uPVC casing and a sealed landfill gas cap. - Graded sand was added adjacent to the screened interval. A minimum seal of 0.5 m was added above the sand and with a grout mixture (consisting of bentonite/cement) to the surface. - The locations of soil landfill gas wells are shown on Figure 3 and well construction logs are presented in Appendix B.
Sampling	- Landfill gas wells were monitored for methane, carbon dioxide, oxygen, hydrogen sulphide, carbon monoxide and gas flow using an infra-red GA5000 approximately one week after installation of the wells. - Measurements were collected over a 20-minute period to assess gas composition over the sampling period.

5.4 Analytical Program

Based on the CSM presented in the Senversa (2018) SAQP and field observations made during investigation works, selected samples were submitted for analyses of the key CoPCs detailed below.

Matrix	Analytes	Primary Samples	Duplicates/Triplicates	Rinsate/Trip Blank
Soil (Test Pitting and Soil Bores)	TRH; BTEX; PAH; Metals; OCP/OPP; PCBs	21	3/3	0/2
	SPOCAS	6	-	-
	Asbestos	13	-	-
	PFAS	6	1/1	-
Soil (Surface and Stockpile Samples)	TRH; BTEX; PAH; Metals; OCP/OPP; PCBs	25	1/1	0/2
	Asbestos	28	-	-
Groundwater	TRH; BTEX; PAH; VOCs; OCP/OPP; nutrients; nitrate/nitrite/ammonia; coliforms; phthalates	4	1/1	1/1
	PFAS	4	-	1/1



5.5 Quality Assurance and Quality Control – Data Usability

A review of the laboratory QA/QC data was completed by Senversa. The QA/QC review indicated that results were generally within the relevant DQI acceptance criteria for the analyses conducted with the exception of the following minor non-conformances:

QA/QC DQI	Non-Conformance	Comment
Soil RPDs	Primary sample TP106_0.8-0.9 and interlaboratory duplicate QC201_0.8-0.9 RPDs: - Nickel – 54% - Zinc – 59% Primary sample TP113_0.2-0.3 and field duplicate / interlaboratory duplicate samples QC103_0.2-0.3 / QC203_0.2-0.3 RPDs: - Zinc – 62% and 57% Primary sample SP02_01112018 and field duplicate sample QC105_01112018 RPDs: - Lead – 62% - Zinc 75%	It is the opinion of Senversa that these RPD exceedances are due to samples being collected from heterogenous fill materials. As all results (primary and secondary samples) were less than the adopted assessment criteria, Senversa does not consider this to have affected the overall quality of the data set.
Groundwater RPDs	Primary sample MW03 and interlaboratory duplicate sample QC201_13112018 - Nitrate as N – 158% - Total Oxidised Nitrogen as N – 117%	It is the opinion of Senversa that these RPD exceedances are due to the typically high variability within groundwater of nutrients such as nitrate and phosphorus. As the results (primary and secondary samples) were less than the adopted assessment criteria, Senversa does not consider this to have affected the overall quality of the data set.
Rinsate Blank	Field rinsate samples exceedances exist for zinc in QC502 and QC503 (0.013 µg/L and 0.007 µg/L).	It is the opinion of Senversa that the above concentration of zinc is considered to be at levels that are marginally above limits of reporting. Since all other rinsate results for all other metals were within acceptable limits, the rinsate failures are not considered grounds to reject the data.
Laboratory Matrix Spike Recovery (%)	The matrix spike recovery for copper is below the laboratory acceptance criteria of 75-125% (74%) in laboratory report 625685.	It is noted that an acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference, and therefore Senversa does not consider this to have affected the overall quality of the dataset.
<u>Laboratory Duplicate RPDs</u>	The laboratory duplicate RPDs exceeded the acceptance criteria for a range of PAHs	It is noted that the reported RPDs pass the internal laboratory QC criteria as defined in the Internal Quality review in report 625685.

Based on an assessment of the collected data set and in consideration of the adopted DQIs for the project it is the opinion of Senversa that the data validation procedure employed in the assessment of the field and laboratory QA/QC data indicated that the reported analytical results are representative of soil, groundwater and soil gas conditions at the sample locations at the time of sampling, and that the overall quality of the analytical data produced is considered acceptably reliable for the purposes of this investigation.



6.0 Assessment Criteria

The following assessment criteria listed in **Table 6-1** were adopted for the purpose of preliminary screening concentrations of contaminants.

Table 6-1: Assessment Criteria

Media	Adopted Assessment Criteria
Soil	<u>Human Health</u> Soil contaminant concentrations will be compared against published values consistent with requirements in NEPM, 2013 sourced from the following: • Health Investigation Levels (HILs): ▪ HIL D (commercial / industrial). • Health Screening Levels (HSLs) for vapour intrusion: ▪ HSL D (commercial / industrial). Use of these values for screening purposes is considered conservative for samples collected at greater depth or silt/ clay formation. Soil properties will be determined during the investigations. Asbestos will be screened for presence / absence. In addition to the above, although not specifically included in the NEPM, the following will also be used: • PFAS specific human health criteria will be sourced from the <i>PFAS National Environmental Management Plan, Heads of Environment Protection Authority (HEPA) (2018)</i> assuming the same land uses above. <u>Ecological</u> Soil contaminant concentrations will be compared against published values consistent with requirements in NEPM, 2013 sourced from the following: • Ecological Investigation Levels (EILs) for assessment of risks to terrestrial ecological receptors for an urban residential/ public open space setting. The input parameters for the Added Contaminant Limits will be determined during the investigation. Ambient Background Concentrations will be sourced from Schedule B5 of the NEPM, 2013. • Ecological Screening Levels (ESLs) for assessment of risks to terrestrial ecological receptors assuming for an urban residential and public open space setting. Soil properties will be determined during the investigations. • PFAS specific ecological criteria will be sourced from the PFAS National Environmental Management Plan, Heads of Environment Protection Authority (HEPA) (2018) assuming the same land uses above. The NEPM (NEPC, 2013) specifies the following ecologically based investigation / screening levels: • Default Ecological Investigation Level (EILs) for arsenic, lead, DDT and naphthalene. • A methodology for derivation of site-specific EILs for lead, nickel, chromium III, copper and zinc. The derivation process requires determination of ambient background concentrations (ABC) and added contaminant limits (ACLs) for these chemicals, and the EIL is then calculated as the ABC plus the ACL. In the absence of site-specific data for pH and CEC only the most conservative ACL has been adopted as the screening criteria for these analytes. • Ecological screening levels (ESLs) for benzene, toluene, ethylbenzene and xylenes (BTEX), benzo(a)pyrene and petroleum hydrocarbon fractions. Based on the currently approved land use, EILs/ESLs for commercial and industrial have been adopted. <u>Management Limits</u> Management Limits for assessment of risks to both human health in commercial and industrial settings will be applied subsequent to the above screening criteria. <u>Aesthetic</u> Consideration with also be given to the aesthetics of the soil encountered.
Groundwater	<u>Human Health</u> For the purpose of this assessment, groundwater concentrations of contaminants will be compared against published values consistent with requirements in NEPM, 2013 sourced from the following in the specified order of preference: • Health Screening Levels (HSLs) for vapour intrusion – HSL D (commercial / industrial) as per the NEPM, 2013.



Media Adopted Assessment Criteria

- National Health and Medical Research Council (2011) *Australian Drinking Water Guidelines* (updated August 2018). While groundwater is considered unlikely to be used for drinking purposes in the vicinity of the site, screening against drinking water guideline values will be conducted on a conservative basis under the scenario that groundwater is extracted and used for other purposes. Screening against drinking water guideline values has also been conducted on a conservative basis under the scenario that groundwater has the potential to discharge to a surface water body which could be used for recreational purposes.
- Australian and New Zealand Environment Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZECC & ARMCANZ, 2000). On the basis that the most likely nearest potential surface water receptor is a fresh water body, Trigger Values for fresh water and 95% protection levels (unless otherwise noted) have been adopted. Comparison against these criteria is considered conservative as some attenuation of chemical constituents would be expected prior to groundwater at the site reaching the nearest potential surface water receptors (Lane Cove River to the west and Stringybark Creek to the north).
- PFAS specific human health criteria will be sourced from the *PFAS National Environmental Management Plan*, Heads of Environment Protection Authority (HEPA) (2018) for drinking water and recreational water.

Ecological

- Australian and New Zealand Environment Conservation Council (ANZECC) & Agriculture and Resource Management Council of Australia and New Zealand (ARMCANZ), Australian and New Zealand Guidelines for Fresh and Marine Water Quality (ANZAST, August 2018). On the basis that the most likely nearest potential surface water receptor is a fresh water body, Trigger Values for fresh water and 95% protection levels (unless otherwise noted) have been adopted. Comparison against these criteria is considered conservative as some attenuation of chemical constituents would be expected prior to groundwater at the site reaching the nearest potential surface water receptors (Lane Cove River to the west and Stringybark Creek to the north).
 - PFAS specific ecological criteria will be sourced from the *PFAS National Environmental Management Plan*, Heads of Environment Protection Authority (HEPA) (2018) for the protection of 95 % or 99 % (where appropriate) for freshwater species.
-



7.0 Investigation Results

7.1 Soil Investigation

7.1.1 Field Observations

Figure 3 presents soil investigation locations. Bore logs detailing the stratigraphic conditions encountered during drilling of boreholes are presented in Appendix B.

During soil investigation works the following fill materials were identified throughout the site.

- Fill material comprising dark brown to brown-yellow, silty to clayey sands with trace anthropogenic inclusions were identified within test pit locations located within the central portion of the site (TP103, TP104, TP105, TP106 and TP107) to an average depth of approximately 0.1 – 0.5 m bgl and a maximum depth of 1.0 m bgl within TP107. During test pitting works no evidence of odours or staining was noted within this shallow fill material. Field screening for the presence of volatile organic compounds (VOCs) using a PID returned a maximum concentration of 1.1 ppm.
 - Senversa notes that a fragment of potential bonded ACM was observed within the surface soil at test pit location TP107.
- Fill material comprising black sandy gravel with quartz inclusions was observed in the south western portion of the site at test pit locations TP101 and TP102 to a maximum depth of 1.5 m bgl. No evidence of odours or staining was noted in this material. Field screening for the presence of volatile organic compounds (VOCs) using a PID returned a maximum concentration of 0.5 ppm.
- Fill material comprising brown to red brown sandy clays to clayey sands associated with the capped area subject to the NSW EPA maintenance order in the northern portion of the site was encountered in test pits TP111 – TP120 to a maximum depth of 3.7 m bgl. Based on field observations made during test pitting works, the capped area is inferred to be located along the northern boundary of the site.
- Field screening undertaken during investigation works did not identify any areas of staining / odours with the exception of isolated fill materials that appeared to be crystallised molasses located within SB/MW05 located within the north western portion of the site within the vicinity of the former molasses tanks and within SB/MW03 located within the central portion of the capped area.

The inferred distribution of observed fill materials is presented within **Figure 5**.

Natural alluvial soils with a strong sulphuric / organic odour were identified within the northern portion of the site underlying the capped area adjacent to the lane cove river.

Natural sandstone outcroppings were noted within the central and north eastern portion of the site. Natural sandstone was identified to underly fill materials in all test pits and soil bores excavated within the Site.

7.1.2 Analytical Results

Test Pitting and Soil Bores

Laboratory analysis of collected soil samples reported concentrations of all CoPCs analysed less than the laboratory limit of reporting (LOR) and / or the adopted health assessment criteria with the exception of the following:

- Heavy metals (copper, zinc and nickel) exceeded the adopted ecological assessment criteria within fill materials throughout the site.
- TRH C10-C36 exceeding the adopted ecological assessment criteria were identified at a depth of 3.8 m bgl within fill materials located within the inferred capped area.
- Asbestos was identified within fill materials at a depth of approximately 3.0 m bgl located within the inferred capped area.
- Asbestos was also identified within fill materials at a depth of 1.8 m bgl at TP111 located adjacent to the inferred capping area.



Senversa notes that PFAS compounds were identified within one sample of fill materials located within the inferred capped area at concentrations less than the adopted assessment criteria but greater than LOR at a depth of 1.2 m bgl.

Senversa further notes that PAHs less than the adopted assessment criteria but exceeding LOR were identified within fill materials at TP107 at a depth of 0.7 m bgl.

The location of samples identified to exceed the adopted assessment criteria are illustrated on **Figure 6**.

Stockpile and Surface Soil Sampling.

Laboratory analysis of collected soil samples reported concentrations of all CoPCs analysed less than the laboratory limit of reporting (LOR) and / or the adopted health assessment criteria with the exception of the following:

- Heavy metals (nickel and zinc) exceeded the adopted ecological assessment criteria illegally dumped stockpiled materials and surface sample SS03.
- Asbestos was detected within illegally dumped material stockpiled within the northern portion of the site and surface sample SS05 (located adjacent to stockpiled fill materials).

The location of samples identified to exceed the adopted assessment criteria are illustrated on **Figure 7**.

Acid Sulphate Soils

The soil investigation results were compared against action criteria provided in the Acid Sulphate Soils Management Advisory Committee (ASSMAC) Acid Sulphate Soils Manual (Stone et al, 1998).

Laboratory analysis indicates that sulphides are probably present but have not been oxidised within soil materials located within the northern portion of the site indicating the presence of potential ASS. Senversa notes that the concentrations identified within laboratory analysis have triggered the “action levels” and as such an Acid Sulphate Soil Management Plan will be required for the development.

7.1.2.1 Potential Distribution / Extent of Fill Materials

Based on the results of the desktop assessment and field observations made during completion of this Phase 2 Investigation it is the opinion of Senversa that fill materials are limited throughout the site to a depth of between 0.1 and 1.09 m bgl with the exception of three areas within the site (illustrated on **Figure 5**).

- Approximately 1000 m³ of illegally dumped materials stockpiled within the central portion and northern portions of the site.
- The central portion of the site within the vicinity of TP107 where fill materials were identified to a depth of approximately 1.0 m bgl. Senversa notes that natural sandstone outcroppings were located within the central portion of the site and as such fill materials within the vicinity of TP107 are considered to be isolated.
- The capped area located within the northern portion of the site where a total of approximately 12,000 m³ of fill material was identified.
- An area of filling within the south western portion of the site within the vicinity of TP101 and TP102.

Based on laboratory analysis of collected samples and field observations made during completion of these investigation works, it is the opinion of Senversa that should the material within the capped area require offsite disposal during construction activities the material would likely be pre-classified as ‘Special Waste (Asbestos)’ under the Waste Classification Guidelines, Part 1: Classifying Waste (NSW EPA, 2014).

The approximate cost of removing the entirety of the Stockpile material from the Site would be in the region of \$6-9M (assuming 13,000 m³ – 15,000 m³ at a density of 1.8 and a cost to dispose, inclusive of testing, formal waste-classification, dig, haul and dispose of \$250-\$300/tonne).



Senversa notes that fill materials within the remainder of the site will require additional sampling and analysis for waste classification purposes to facilitate potential offsite disposal. Information provided to Senversa indicates the development will likely involve the staged excavation and stockpiling of fill materials prior to disposal. It is the opinion of Senversa that waste classification may be undertaken at this time.

Senversa notes that where a detailed waste classification is undertaken involving the collection and analysis of additional samples of stockpiled materials etc, it may be possible to reduce the volume of material requiring disposal as asbestos impacted.

7.2 Groundwater Investigation

7.2.1 Field Observations

A summary of field observations reported during groundwater sampling works undertaken on the 13 November 2018 is provided in the table below.

Groundwater gauging and field measured water quality parameters are provided in **Table 6**. Groundwater sampling field forms are provided in **Appendix E**.

Parameter	Description
Standing Water Levels (SWLs)	SWLs ranged from 3.989 m btoc (MW03) to 14.216 m btoc (MW04).
Observations	During sampling works groundwater from sampled wells was observed to be slightly – moderately turbid, no identified sheen, with an organic odour.
Electrical conductivity (EC)	The EC of groundwater of ranged between 2.61 (MW04) micro-Siemens per centimetre ($\mu\text{S}/\text{cm}$) and 1656 $\mu\text{S}/\text{cm}$ (MW03).
pH	The pH of the groundwater ranged from 5.38 (MW01) and 6.55 (MW05). Indicating slightly acidic conditions.
Dissolved Oxygen (DO)	The dissolved oxygen (DO) content of groundwater ranged from 0.06 mg/L (MW05) to 0.42mg/L (MW01) indicating anaerobic conditions.
Temperature	Measured groundwater temperature ranged from 18°C (MW04) to 21.3°C (MW01).

7.2.2 Analytical Results

Laboratory analysis of collected groundwater samples reported concentrations of all CoPCs analysed less than the laboratory limit of reporting (LOR) and / or the adopted health assessment criteria with the exception of the following:

- PFOS and sum of PFHxS and PFOS exceeding the adopted ecological criteria was identified within monitoring wells MW05 (located within the central portion of the inferred capped area). Senversa notes that PFHxS concentrations also exceeded the adopted drinking water criteria within MW05.
- Heavy metals (copper, zinc and nickel) exceeded the adopted ecological assessment criteria within MW03, MW04 and MW05. Senversa notes that nickel concentrations exceeded the adopted drinking water criteria within MW04.
- Ammonia was identified as exceeding the adopted ecological assessment criteria in monitoring wells MW03 and MW05 located within the inferred capped area.



7.3 Landfill Gas Investigation

Concentrations of methane, carbon dioxide, oxygen, hydrogen sulphide and carbon monoxide were monitored in wells MW03 and MW05. Collected results are presented in the following table:

Bore ID	Start Time	Methane %v/v		Carbon Dioxide % v/v		Oxygen % v/v		Flow (L/min)	H ₂ S (ppm)	CO (ppm)	Water Level (m bTOC)	Depth of Well (m bTOC)	Screen Interval (m bTOC)
		Max	Steady	Max	Steady	Max	Steady						
MW03	7.52	0.00	0.00	20.7	18.8	1.6	1.4	0	0	0	3.989	7.47	7.47 – 3.4
MW05	8.12	0.0	0.00	20.3	19.8	0.7	0.7	0	0	0	3.443	6.29	6.29 – 0.2

Significant concentrations of the landfill gas methane were not detected at the site; however, potentially significant concentrations of carbon dioxide were detected. NSW EPA (2012) suggests that if carbon dioxide is detected above 5% v/v, even with zero flow, then Characteristic Situation 2 should be considered indicating that gas protection measures might be required in buildings developed on the site. Further ground gas monitoring is required to provide better definition of site conditions.



8.0 Conclusions and Recommendations

Senversa was engaged by Greenbox to undertake a Phase 2 Assessment for the site located at 1 Sirius Road, Lane Cove West, NSW. Senversa understands that Greenbox is proposing redevelopment of the site to comprise a data centre.

The site is regulated by the NSW EPA under the *Contaminated Land Management Act 1997* as the northern portion of the site was previously found to be impacted by contaminated fill material. It was remediated by capping the fill material with clay and a 'Notice Maintaining Remediation' (No.28027, 27 September 2005) was put in place on it by the EPA.

The Phase 2 was undertaken to assess the potential distribution / extent of contamination in soil and groundwater identified on-site within the Senversa (2018a). The assessment was undertaken in accordance with the requirements detailed within the Senversa (2018b), the SAQP.

Field observations made during investigation works identified fill materials within the following areas:

- Approximately 1000 m³ of illegally dumped materials stockpiled within the central portion and northern portions of the site. It is the understanding of Senversa that the current site owner will be responsible for the classification and offsite disposal of all illegally dumped materials within the site.
- Fill materials were observed to a depth of 1 m bgl in TP107 the central portion of the site. Senversa notes that natural sandstone outcrops were observed throughout the central portion of the site and as such fill materials identified within TP107 are likely to be isolated in extent.
- The inferred capped area (subject to the NSW EPA maintenance order) is located in the northern portion of the site and has an approximate total 12,000 m³ of fill material. The area is shown on **Figure 3** and **Figure 5**.
- Fill materials were also observed in the south western portion of the site in the vicinity of TP101 and TP102. Based on the topography and sandstone outcroppings within close proximity to this area, Senversa considers that fill material within this portion of the site is likely to be isolated in extent.

Field observations made during the works did not identify any areas of staining / odours with the exception of isolated fill materials that appeared to be crystallised molasses located at a depth of approximately 1.5 m bgl within SB05 in the north west of the site near the former molasses tanks and at a depth of approximately 3.0 m bgl within SB03 located within the central portion of the capped area.

Field screening for landfill gases did not detect significant concentrations of the ground gas methane but potentially significant concentrations of carbon dioxide were detected.

Sandstone was found to be outcropping naturally in the central and northern portion of the site and as bedrock underlying fill materials in the majority of test pit / drilling locations.

Laboratory analysis of collected soil samples returned concentrations of contaminants of potential concern (CoPCs) less than the adopted assessment criteria with the exception of:

- Heavy metals (zinc, copper and nickel) exceeding ecological criteria in fill materials.
- Asbestos and hydrocarbons in fill materials located within illegally stockpiled surface materials and fill materials located within and adjacent to the inferred capped area.
- Laboratory analysis for ASS indicated the potential for ASS to be present. An Acid Sulphate Soil Management Plan will be required for the development.

Groundwater was identified at depths ranging from 4 m to 14 m below the surface and was inferred to be flowing in a north westerly direction towards the Lane Cove River.



Laboratory analysis of collected groundwater samples reported concentrations of all CoPCs less than the adopted health assessment criteria with the exception of the following:

- PFOS and sum of PFHxS and PFOS exceeded the ecological criteria in MW05 (in the central portion of the inferred capped area).
 - PFHxS concentrations also exceeded the adopted drinking water criteria in MW05. Senversa notes that the use of groundwater for drinking is unlikely.
- Heavy metals (copper, zinc and nickel) exceeded the adopted ecological assessment criteria in MW03, MW04 and MW05. Nickel exceeded the drinking water criteria in MW04.
- Ammonia exceeded the adopted ecological assessment criteria in MW03 and MW05 in the inferred capped area.

Conclusions and Recommendations

Fill materials within the capping area were found to be contaminated with asbestos containing materials (ACM) and require remediation prior to redevelopment. If remediation requires fill material to be disposed of offsite it should be pre-classified as 'Special Waste (Asbestos)' unless further testing indicates otherwise.

Senversa notes that fill materials within the remainder of the site will require additional sampling and analysis for waste classification purposes to facilitate potential offsite disposal. Information provided to Senversa indicates the development will likely involve the staged excavation and stockpiling of fill materials prior to disposal. It is the opinion of Senversa that waste classification may be undertaken at that time.

Potentially significant concentrations of the hazardous ground gas carbon dioxide were detected.

The approximate cost of removing the entirety of the fill material from the site would be in the region of \$7-9M (assuming 13,000 m³ – 15,000 m³ at a density of 1.8 and a cost to dispose, inclusive of testing, formal waste-classification, dig, haul and dispose of \$250-\$300/tonne).

Based on the results of this investigation Senversa considers that the site can be made suitable for the proposed development and recommends that a Remedial Action Plan (RAP) be developed. The RAP should detail the remedial processes and procedures needed to manage contamination identified in this investigation to facilitate development of the site. The following requirements should be adopted during and or prior to remediation:

- Specific requirements for any works that impact the portion of the site subject to the NSW EPA Notice Maintaining Remediation' (No.28027, 27 September 2005).
- Additional groundwater monitoring to assess identified PFAS within fill and groundwater within the vicinity of the inferred capped area.
- Additional ground gas monitoring to assess whether carbon dioxide issues may have a potentially significant impact on the development.
- An acid sulphate soils management plan.



9.0 Principles and Limitations of Investigation

The following principles are an integral part of site contamination assessment practices and are intended to be referred to in resolving any ambiguity or exercising such discretion as is accorded the user or site assessor.

Area	Limitations
Elimination of Uncertainty	Some uncertainty is inherent in all site investigations. Furthermore, any sample, either surface or subsurface, taken for chemical testing may or may not be representative of a larger population or area. Professional judgment and interpretation are inherent in the process, and even when exercised in accordance with objective scientific principles, uncertainty is inevitable. Additional assessment beyond that which was reasonably undertaken may reduce the uncertainty.
Failure to Detect	Even when site investigation work is executed competently and in accordance with the appropriate Australian guidance, such as the National Environmental Protection (Assessment of Site Contamination) Amendment Measure ('the NEPM'), it must be recognised that certain conditions present especially difficult target analyte detection problems. Such conditions may include, but are not limited to, complex geological settings, unusual or generally poorly understood behaviour and fate characteristics of certain substances, complex, discontinuous, random, or heterogeneous distributions of existing target analytes, physical impediments to investigation imposed by the location of services, structures and other man-made objects, and the inherent limitations of assessment technologies.
Limitations of Information	The effectiveness of any site investigation may be compromised by limitations or defects in the information used to define the objectives and scope of the investigation, including inability to obtain information concerning historic site uses or prior site assessment activities despite the efforts of the user and assessor to obtain such information.
Chemical Analysis Error	Chemical testing methods have inherent uncertainties and limitations. Senversa routinely seeks to require the laboratory to report any potential or actual problems experienced, or non-routine events which may have occurred during the testing, so that such problems can be considered in evaluating the data.
Level of Assessment	The investigation herein should not be considered to be an exhaustive assessment of environmental conditions on a property. There is a point at which the effort of information obtained, and the time required to obtain it outweigh the benefit of the information gained and, in the context of private transactions and contractual responsibilities, may become a material detriment to the orderly conduct of business. If the presence of target analytes is confirmed on a property, the extent of further assessment is a function of the degree of confidence required and the degree of uncertainty acceptable in relation to the objectives of the assessment.
Comparison with Subsequent Inquiry	The justification and adequacy of the investigation findings in light of the findings of a subsequent inquiry should be evaluated based on the reasonableness of judgments made at the time and under the circumstances in which they were made.
Data Useability	Investigation data generally only represent the site conditions at the time the data were generated. Therefore, the usability of data collected as part of this investigation may have a finite lifetime depending on the application and use being made of the data. In all respects, a future reader of this report should evaluate whether previously generated data are appropriate for any subsequent use beyond the original purpose for which they were collected, or are otherwise subject to lifetime limits imposed by other laws, regulations or regulatory policies.
Nature of Advice	The investigation works herein are intended to develop and present sound, scientifically valid data concerning actual site conditions. Senversa does not seek or purport to provide legal or business advice.



10.0 References

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- WA Department of Health (2009). *Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia*.



Figures

Figure 1: Site Location Plan

Figure 2: Site Layout

Figure 3: Sample Location Plan

Figure 4: Groundwater Elevation and Contours

Figure 5: Observed Distribution of Fill Materials

Figure 6: Soil Exceedances Test Pitting and Soil Bores

Figure 7: Soil Exceedances Stockpile Sampling and Surface Samples

Figure 8: Groundwater Exceedances



Path: Y:\16_GIS\01_Jobs\161913_AIRTRUNK_SIRIUS_LANE_COVE_DSIMXD\1_Working\MXDS\161913_002_F001_Site Location.mxd

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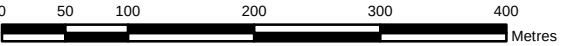
Address: Level 5, 201 Kent Street,
Sydney NSW 2000
Phone: (02) 9994 8016
Website: www.servensa.com.au

Legend

 Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd

Designed:	R. McKinnon	Date:	28/11/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:6,000 (A3)
File:	S16913_002_F001_Site Location		



0 50 100 200 300 400 Metres

Datum GDA 1994, Projection MGA Zone 56

Figure No:	1
Title:	Site Location
Project:	Detailed Site Investigation
Location:	1 Sirius Road Lane Cove Lot 1 DP 1151370
Client:	AirTrunk Pty Ltd



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Sydney NSW 2000
Phone: (02) 9994 8016
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Legend

-  Contaminated Area Survey Extent
 Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd
Contaminated Area Survey Extent as per Lane Cove 330kV
Substation Contamination Area Boundary Marking Survey
Survey Map P18495

Designed:	R. McKinnon	Date:	29/11/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:1,250 (A3)
File:	S16913_002_F002_Site Layout		

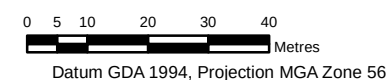


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Title:	Site Layout
Project:	Detailed Site Investigation
Location:	1 Sirius Road Lane Cove Lot 1 DP 1151370
Client:	AirTrunk Pty Ltd

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Address: Level 5, 201 Kent Street,
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- Legend**
- Groundwater Monitoring Well
 - Inferred Groundwater Contours
 - Estimated Groundwater Contours
 - Groundwater Flow Direction
 - Contaminated Area Survey Extent
 - Site Boundary

Well ID
Reduced Water Level (mAHD)

Notes:
Aerial imagery sourced from Nearmap Pty Ltd
Contaminated Area Survey Extent as per Lane Cove 330kV
Substation Contamination Area Boundary Marking Survey
Survey Map P18495

Designed:	A. Cronly	Date:	29/11/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:1,250 (A3)
File:	S16913_002_F004_GW Elevation and Contours		

01020406080

Metres

Datum GDA 1994, Projection MGA Zone 56

Figure No:	4
Title:	Groundwater Elevation and Contours
Project:	Detailed Site Investigation
Location:	1 Sirius Road Lane Cove Lot 1 DP 1151370
Client:	AirTrunk Pty Ltd

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Path: Y:\16 GIS\01 Jobs\1 NSW Jobs\161913 AIRTRUNK SIRIUS LANE COVE DSI\MXD\1 Working MXD\SI161913_002_F006A_Soil Exceedence - TP and SB.mxd



TP101	
0.4 - 0.5	
Copper	790
Nickel	74
Zinc	190

TP102	
1 - 1.1	
Copper	110

TP114	
1.4 - 1.5	
Copper	260

TP115	
2.4 - 2.5	
Copper	140
Zinc	170
3 - 3.1	
Asbestos Reported Result	detected

SB03	
1.9 - 2	
Copper	170
Nickel	73

TP119	
2.4 - 2.5	
Copper	110
Zinc	610
3.7 - 3.8	
Zinc	180
C10-C14	310
>C10-C16	350

TP111	
1.8 - 1.9	
Copper	560
Zinc	310

TP106	
0.8 - 0.9	
Nickel	61

Sample Location ID	
Depth (mbgl)	
Analyte	Result (mg/kg)
NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	
NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand	
NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	
NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	
Human health - Industrial / commercial	
Interim soil - ecological indirect exposure - Industrial / commercial	



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Legend

- Soil Bore/Groundwater Monitoring Well
- Test Pit
- Contaminated Area Survey Extent
- Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd
Contaminated Area Survey Extent as per Lane Cove 330kV
Substation Contamination Area Boundary Marking Survey
Survey Map P18495

Designed:	A. Cronly	Date:	29/11/2018
Drawn:	M. Byrne	Revision:	0
Checked:	.	Scale:	1:1,250 (A3)
File:	S16913_002_F006A_Soil Exceedence - TP and SB		

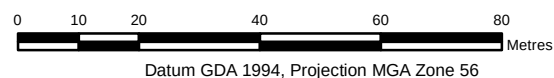


Figure No:	6A
Title:	Soil Exceedence Locations – Test Pitting and Soil Bores
Project:	Detailed Site Investigation
Location:	1 Sirius Road Lane Cove Lot 1 DP 1151370
Client:	AirTrunk Pty Ltd

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Legend

- Stockpile Sample
- Surface Sample
- Contaminated Area Survey Extent
- Site Boundary

Notes:
Aerial imagery sourced from Nearmap Pty Ltd
Contaminated Area Survey Extent as per Lane Cove 330kV Substation Contamination Area Boundary Marking Survey Map P18495

Designed: A. Cronly	Date: 29/11/2018
Drawn: M. Byrne	Revision: 0
Checked: .	Scale: 1:1,250 (A3)
File: S16913_002_F006B_Soil Exceedence - SP and SS	

0 10 20 40 60 80 Metres
Datum GDA 1994, Projection MGA Zone 56

Figure No: 6B

Title: Soil Exceedence Locations – Stockpiles and Surface Samples

Project: Detailed Site Investigation

Location: 1 Sirius Road Lane Cove Lot 1 DP 1151370

Client: AirTrunk Pty Ltd

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Path: Y:\16 GIS\01 Jobs\1 NSW Jobs\16913 AIRTRUNK SIRIUS LANE COVE DSIMXDST1 Working MXD\SI16913_002_F006C_GW Exceedences.mxd





Tables

Table 1: Soil Results – Test Pits and Soil Bores

Table 2: Soil Results – Surface Samples and Stockpile Samples

Table 3: Groundwater Results

Table 4: QAQC RPDs

Table 5: QAQC Blanks and Rinsates

Table 1: Soil Results Test Pits and Soil Bores



Location Code		SB03				SB04	SB05		TP101		TP102			TP105	
Field ID		SB03 0.7-0.8	SB03 1.9-2.0	SB03 2.7-2.8	SB03 3.9-4.0	SB04 0.1-0.2	SB05 1.9-2.0	SB05 2.5-2.6	TP101 0.4-0.5	TP101 SS	TP102 1.0-1.1	TP102 1.6-1.7	TP102 SS	TP105 0.4-0.5	TP105 SS
Date		01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18
Depth		0.7 - 0.8	1.9 - 2	2.7 - 2.8	3.9 - 4	0.1 - 0.2	1.9 - 2	2.5 - 2.6	0.4 - 0.5	0	1 - 1.1	1.6 - 1.7	0	0.4 - 0.5	0
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.		626499	626499	626499	626499	626499	626499	626499	626280	626280	626280	626280	626280	626280	626280
		Unit	EQL	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial	Interim soil - ecological indirect exposure - Industrial / commercial				
				0-1m	1-2m	2-4m	>=4m								
Physical Parameters															
Moisture Content	%	0.1									10	18	36	46	11
Metals															
Arsenic	mg/kg	2	3000 ^{F1}					160 ^{F8}			4.6	3.5	2.0	-	<2
Cadmium	mg/kg	0.4	900								<0.4	<0.4	<0.4	-	<0.4
Chromium	mg/kg	2						320 ^{F9}			25	11	18	-	9.8
Copper	mg/kg	5	240000					95 ^{F10}			25	170	29	-	<5
Lead	mg/kg	5	1500 ^{F2}					1830 ^{F11}			93	43	270	-	8.8
Mercury	mg/kg	0.1	730 ^{F3}								<0.1	0.3	3.5	-	<0.1
Nickel	mg/kg	2	6000					60 ^{F10}			12	73	<5	-	<5
Zinc	mg/kg	5	400000					150 ^{F10}			110	150	45	-	5.4
BTEX															
Benzene	mg/kg	0.1		3	3	3	3	75 ^{F12}			<0.1	<0.1	<0.1	-	<0.1
Toluene	mg/kg	0.1		NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}	135 ^{F12}			<0.1	<0.1	<0.1	-	<0.1
Ethylbenzene	mg/kg	0.1		NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}	165 ^{F12}			<0.1	<0.1	<0.1	-	<0.1
Xylene (m & p)	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2
Xylene (o)	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1
Total Xylene	mg/kg	0.3		230	NL ^{F7}	NL ^{F7}	NL ^{F7}	95 ^{F13}			<0.3	<0.3	<0.3	-	<0.3
Total BTEX	mg/kg	0.2									-	-	-	-	-
Total Petroleum Hydrocarbons															
C6-C9 Fraction	mg/kg	10						215 ^{F14}			<20	<20	<20	-	<20
C10-C14 Fraction	mg/kg	20						170 ^{F15}			<20	27	<20	-	<20
C15-C28 Fraction	mg/kg	50									<50	130	150	-	<50
C29-C36 Fraction	mg/kg	50									<50	<50	<50	-	<50
C10-C36 Fraction (Sum)	mg/kg	50									<50	157	150	-	<50
Total Recoverable Hydrocarbons															
C6-C10 Fraction	mg/kg	10							700		<20	<20	<20	-	<20
C6-C10 Fraction minus BTEX (F1)	mg/kg	10		260	370	630	NL ^{F7}	215			<20	<20	<20	-	<20
>C10-C16 Fraction	mg/kg	50						170	1000		<50	<50	<50	-	<50
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50		NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}				<50	<50	<50	-	<50
>C16-C34 Fraction	mg/kg	100						1700 ^{F16}	3500		<100	130	170	-	<100
>C34-C40 Fraction	mg/kg	100						3300 ^{F16}	10000		<100	<100	<100	-	<100
>C10-C40 Fraction (Sum)	mg/kg	50									<100	130	170	-	<100
PAHs															
Acenaphthene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Acenaphthylene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Anthracene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Benz(a)anthracene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Benzo(a)pyrene	mg/kg	0.5						1.4 ^{F17}			<0.5	<0.5	<0.5	-	<0.5
Benzo(b+j)fluoranthene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Benzo(g,h,i)perylene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Benzo(k)fluoranthene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Chrysene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Dibenz(a,h)anthracene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Fluoranthene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Fluorene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Naphthalene	mg/kg	0.5		NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}	370 ^{F18}			<0.5	<0.5	<0.5	-	<0.5
Phenanthrene	mg/kg	0.5									<0.5	0.5	<0.5	-	<0.5
Pyrene	mg/kg	0.5									<0.5	<0.5	<0.5	-	<0.5
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	40 ^{F24}								<0.5	<0.5	<0.5	-	<0.5
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5	4000 ^{F5}								<0.5	0.5	<0.5	-	<0.5
Organochlorine Pesticides															
a-BHC	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
b-BHC	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
d-BHC	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
g-BHC (Lindane)	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Aldrin	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Dieldrin	mg/kg	0.05									<0.05	0.06	0.07	-	<0.05
Aldrin + Dieldrin	mg/kg	0.05	45								<0.05	0.06	0.07	-	<0.05
Chlordane	mg/kg	0.05	530								<0.1	<0.1	1.0	-	<0.1
DDT	mg/kg	0.05						640 ^{F18}			<0.05	<0.05	<0.05	-	<0.05
4,4-DDE	mg/kg	0.05									<0.05	0.43	<0.05	-	<0.05
DDD	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
DDT+DDE+DDD	mg/kg	0.05	3600								<0.05	0.43	<0.05	-	<0.05
Endosulfan I	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Endosulfan II	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Endosulfan sulfate	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Endrin	mg/kg	0.05	100								<0.05	<0.05	<0.05	-	<0.05
Chlordane (cis)	mg/kg	0.05									-	-	-	-	-
Chlordane (trans)	mg/kg	0.05									-	-	-	-	-
Endrin aldehyde	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Endrin ketone	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Heptachlor	mg/kg	0.05	50								<0.05	<0.05	<0.05	-	<0.05
Heptachlor epoxide	mg/kg	0.05									<0.05	<0.05	<0.05	-	<0.05
Methoxychlor	mg/kg	0.05	2500								<0.05	<0.05	<0.05	-	<0.2
Endosulfan	mg/kg	0.05	2000								-	-	-	-	-
Toxaphene	mg/kg	1	160								<1	<1	<1	-	<1
Organochlorine Pesticides (EPAVic)	mg/kg	0.1									<0.1	0.49	1.07	-	<0.1
Other Organochlorine Pesticides (EPAVic)	mg/kg	0.1									<0.1	<0.1	1	-	<0.1

Table 1: Soil Results Test Pits and Soil Bores



										Location Code	TP106			TP107		TP111		TP113									
										Field ID	TP106_0.8-0.9	QC101_0.8-0.9	QC201_0.8-0.9	TP107_0.5-0.6	TP107_0.6-0.7	TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	QC103_0.2-0.3	QC203_0.2-0.3	QC104_1.1-1.2	QC204_1.1-1.2	TP113_1.6-1.7	TP114_1.4-1.5			
										Date	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18		
										Depth	0.8 - 0.9	0.8 - 0.9	0.8 - 0.9	0.5 - 0.6	0.6 - 0.7	1.8 - 1.9	2.1 - 2.2	0.2 - 0.3	0.2 - 0.3	0.2 - 0.3	1.1 - 1.2	1.1 - 1.2	1.6 - 1.7	1.4 - 1.5			
										Sample Type	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Field_D	Interlab_D	Field_D	Interlab_D	Normal	Normal			
										Lab Report No.	626280	626280	ES1832601	626280	626280	626298	626298	626298	626298	626298	ES1832702	626298	ES1832702	625350	626298		
										Unit																	
										EQL																	
										NEPC 2013 Table 1A(1) Hills Comm/Ind D Soil																	
										NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand	0-1m	1-2m	2-4m	>=4m													
										NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial																	
										NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)																	
										Human health - Industrial / commercial																	
										Interim soil – ecological indirect exposure - Industrial / commercial																	
											12	16	12.4	10	-	20	11	17	13	13.6	11	11.4	9.9	18			
										Physical Parameters																	
										Moisture Content	%	0.1															
										Metals																	
										Arsenic	mg/kg	2	3000 ^{F1}														
										Cadmium	mg/kg	0.4	900														
										Chromium	mg/kg	2															
										Copper	mg/kg	5	240000														
										Lead	mg/kg	5	1500 ^{F2}														
										Mercury	mg/kg	0.1	730 ^{F3}														
										Nickel	mg/kg	2	6000														
										Zinc	mg/kg	5	400000														
										BTEX																	
										Benzene	mg/kg	0.1		3	3	3	3										
										Toluene	mg/kg	0.1	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}										
										Ethylbenzene	mg/kg	0.1	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}										
										Xylene (m & p)	mg/kg	0.2															
										Xylene (o)	mg/kg	0.1															
										Total Xylene	mg/kg	0.3	230	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}										
										Total BTEX	mg/kg	0.2															
										Total Petroleum Hydrocarbons																	
										C6-C9 Fraction	mg/kg	10															
										C10-C14 Fraction	mg/kg	20															
										C15-C28 Fraction	mg/kg	50															
										C29-C36 Fraction	mg/kg	50															
										C10-C36 Fraction (Sum)	mg/kg	50															
										Total Recoverable Hydrocarbons																	
										C6-C10 Fraction	mg/kg	10															
										C6-C10 Fraction minus BTEX (F1)	mg/kg	10	260	370	630	NL ^{F7}											
										>C10-C16 Fraction	mg/kg	50															
										>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}											
										>C16-C34 Fraction	mg/kg	100															
										>C34-C40 Fraction	mg/kg	100															
										>C10-C40 Fraction (Sum)	mg/kg	50															
										PAHs																	
										Acenaphthene	mg/kg	0.5															
										Acenaphthylene	mg/kg	0.5															
										Anthracene	mg/kg	0.5															
										Benz(a)anthracene	mg/kg	0.5															
										Benzo(a)pyrene	mg/kg	0.5															
										Benzo(b+)fluoranthene	mg/kg	0.5															
										Benzo(g,h,i)perylene	mg/kg	0.5															
										Benzo(k)fluoranthene	mg/kg	0.5															
										Chrysene	mg/kg	0.5															
										Dibenz(a,h)anthracene	mg/kg	0.5															
										Fluoranthene	mg/kg	0.5															
										Fluorene	mg/kg	0.5															
										Indeno(1,2,3-c,d)pyrene	mg/kg	0.5															
										Naphthalene	mg/kg	0.5	NL ^{F7}	NL ^{F7}	NL ^{F7}	NL ^{F7}											
										Phenanthrene	mg/kg	0.5															
										Pyrene	mg/kg	0.5															
										Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	40 ^{F4}														
										Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5	4000 ^{F5}														
										Organochlorine Pesticides																	
										a-BHC	mg/kg	0.05															
										b-BHC	mg/kg	0.05															
										d-BHC	mg/kg	0.05															
										g-BHC (Lindane)	mg/kg	0.05															
										Aldrin	mg/kg	0.05															
										Dieldrin	mg/kg	0.05															
										Aldrin + Dieldrin	mg/kg	0.05	45														
										Chlordane	mg/kg	0.05	530														
										DDT	mg/kg	0.05															
										4,4-DDE	mg/kg	0.05															
										DDD	mg/kg	0.05															
										DDT+DDE+DDD	mg/kg	0.05	3600														
										Endosulfan I	mg/kg	0.05															
										Endosulfan II	mg/kg	0.05															
										Endosulfan sulfate	mg/kg	0.05															
										Endrin	mg/kg	0.05	100														
										Chlordane (cis)	mg/kg	0.05															
										Chlordane (trans)	mg/kg	0.05															
										Endrin aldehyde	mg/kg	0.05															
										Endrin ketone	mg/kg	0.05															
										Heptachlor	mg/kg	0.05	50														
										Heptachlor epoxide	mg/kg	0.05															
										Methoxychlor	mg/kg	0.05	2500														
										Endosulfan	mg/kg	0.05	2000														
										Toxaphene	mg/kg	1	160														
										Organochlorine Pesticides (EPAVic)	mg/kg	0.1															
										Other Organochlorine Pesticides (EPAVic)	mg/kg	0.1															

Table 1: Soil Results Test Pits and Soil Bores



Table 1: Soil Results Test Pits and Soil Bores



										Location Code	SB03				SB04	SB05		TP101		TP102		TP105		
										Field ID	SB03_0.7-0.8	SB03_1.9-2.0	SB03_2.7-2.8	SB03_3.9-4.0	SB04_0.1-0.2	SB05_1.9-2.0	SB05_2.5-2.6	TP101_0.4-0.5	TP101_SS	TP102_1.0-1.1	TP102_1.6-1.7	TP102_SS	TP105_0.4-0.5	TP105_SS
										Date	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18
										Depth	0.7 - 0.8	1.9 - 2	2.7 - 2.8	3.9 - 4	0.1 - 0.2	1.9 - 2	2.5 - 2.6	0.4 - 0.5	0	1 - 1.1	1.6 - 1.7	0	0.4 - 0.5	0
										Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
										Lab Report No.	626499	626499	626499	626499	626499	626499	626499	626280	626280	626280	626280	626280	626280	626280
										Interim soil – ecological indirect exposure - Industrial / Industrial / commercial														
	Unit	EQL	NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial														
				0-1m	1-2m	2-4m	>=4m																	
Organophosphorus Pesticides																								
Azinophos Methyl	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Bolstar (Sulprofos)	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Bromophos-ethyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbophenothion	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlorfenvinphos	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Chlorpyrifos	mg/kg	0.05	2000								<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Chlorpyrifos-methyl	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Coumaphos	mg/kg	2									<2	<2	<2	-	<2	<2	<2	<2	-	<2	<2	-	<2	-
Demeton-O	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Demeton-S	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Demeton-S-methyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Diazinon	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Dichlorvos	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Dimethoate	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Disulfoton	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Ethion	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Ethoprop	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Fenitrothion	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Fensulfothion	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Fenthion	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Malathion	mg/kg	0.05									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Merphos	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Methyl parathion	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Mevinphos (Phosdrin)	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Monocrotophos	mg/kg	0.2									<2	<2	<2	-	<2	<2	<2	<2	-	<2	<2	-	<2	-
Naled (Dibrom)	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Omethoate	mg/kg	2									<2	<2	<2	-	<2	<2	<2	<2	-	<2	<2	-	<2	-
Phorate	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Prothiofos	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrazophos	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Ronnel	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Terbufos	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Tetrachlorvinphos	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Trichloronate	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Pesticides																								
Fenamiphos	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
EPN	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Parathion	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Pirimiphos-methyl	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Pirimiphos-ethyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Herbicides																								
Tokuthion	mg/kg	0.2									<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	-	<0.2	-
Fungicides																								
Hexachlorobenzene	mg/kg	0.05	80								<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	-	<0.05	-
Polychlorinated Biphenyls																								
Aroclor 1016	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Aroclor 1221	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	<0.1	<0.1	-	<0.1	-
Aroclor 1232	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Aroclor 1242	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Aroclor 1248	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Aroclor 1254	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Aroclor 1260	mg/kg	0.1									<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
PCBs (Sum of total)	mg/kg	0.1	7 ^{ns}								<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.5	-	<0.5	<0.5	-	<0.5	-
Particle Size																								
<2mm Fraction	g	0.005									-	-	-	140	-	-	-	-	-	-	-	-	-	-
>2mm Fraction	g	0.005									-	-	-	<0.005	-	-	-	-	-	-	-	-	-	-
Analysed Material	%	0.1									-	-	-	100	-	-	-	-	-	-	-	-	-	-
Extraneous Material	%	0.1									-	-	-	<0.1	-	-	-	-	-	-	-	-	-	-
Asbestos																								
Asbestos Reported Result	Comment																							
											non-detected ²¹	non-detected ²¹	non-detected ²¹	-	non-detected ²¹	-	-	-	non-detected ²¹	-	-	non-detected ²¹	-	non-detected ²¹
(n:2) Fluorotelomer Sulfonic Acids																								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005									-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
6:2 Fluorotelomer Sulfonate (6:2 FTS)	mg/kg	0.0005									-	-	-	-	-	-	-	-	-	-	-	-	<0.01	-
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005									-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005									-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
Perfluoroalkane Carboxylic Acids																								
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002									-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002									-	-	-	-	-	-	-	-	-	-	-	-	<0.005	-
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002																						

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Table 1: Soil Results Test Pits and Soil Bores



								Location Code	TP106			TP107		TP111		TP113									
								Field ID	TP106_0.8-0.9	QC101_0.8-0.9	QC201_0.8-0.9	TP107_0.5-0.6	TP107_0.6-0.7	TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	QC103_0.2-0.3	QC203_0.2-0.3	QC104_1.1-1.2	QC204_1.1-1.2	TP113_1.6-1.7	TP114_1.4-1.5			
								Date	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18			
								Depth	0.8 - 0.9	0.8 - 0.9	0.8 - 0.9	0.5 - 0.6	0.6 - 0.7	1.8 - 1.9	2.1 - 2.2	0.2 - 0.3	0.2 - 0.3	0.2 - 0.3	1.1 - 1.2	1.1 - 1.2	1.6 - 1.7	1.4 - 1.5			
								Sample Type	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Field_D	Interlab_D	Field_D	Interlab_D	Normal	Normal			
								Lab Report No.	626280	626280	ES1832601	626280	626280	626298	626298	626298	626298	ES1832702	626298	ES1832702	625350	626298			
	Unit	EQL	NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial	Interim soil – ecological indirect exposure - Industrial / commercial														
				0-1m	1-2m	2-4m	>=4m																		
Organophosphorus Pesticides																									
Azinophos Methyl	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Bolstar (Sulprofos)	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	-	-	-	-	<0.2	
Bromophos-ethyl	mg/kg	0.05										-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	
Carbophenothion	mg/kg	0.05										-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	
Chlorfenvinphos	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Chlorpyrifos	mg/kg	0.05	2000									<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Chlorpyrifos-methyl	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Coumaphos	mg/kg	2										<2	<2	-	<2	-	<2	<2	<2	<2	-	-	-	<2	
Demeton-O	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Demeton-S	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Demeton-S-methyl	mg/kg	0.05										-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	
Diazinon	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Dichlorvos	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Dimethoate	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Disulfoton	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Ethion	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Ethoprop	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Fenitrothion	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Fensulfothion	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Fenthion	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Malathion	mg/kg	0.05										<0.2	<0.2	<0.05	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.05	-	-	<0.2	
Merphos	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Methyl parathion	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	
Mevinphos (Phosdrin)	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Monocrotophos	mg/kg	0.2										<2	<2	<0.2	<2	-	<2	<2	<2	<2	<0.2	-	-	<2	
Naled (Dibrom)	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Omethoate	mg/kg	2										<2	<2	-	<2	-	<2	<2	<2	<2	-	-	-	<2	
Phorate	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Prothiofos	mg/kg	0.05										-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	
Pyrazophos	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Ronnel	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Terbufos	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Tetrachlorvinphos	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Trichloronate	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Pesticides																									
Fenamiphos	mg/kg	0.05										-	-	<0.05	-	-	-	-	<0.05	-	-	-	-	-	
EPN	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	-	-	-	-	<0.2	
Parathion	mg/kg	0.2										<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	<0.2	
Pirimiphos-methyl	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Pirimphos-ethyl	mg/kg	0.05										-	-	<0.05	-	-	-	-	<0.05	-	-	-	-	-	
Herbicides																									
Tokuthion	mg/kg	0.2										<0.2	<0.2	-	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	-	<0.2	
Fungicides																									
Hexachlorobenzene	mg/kg	0.05	80									<0.05	<0.05	<0.05	<0.05	-	<0.05	<0.05	<0.05	<0.05	-	-	-	<0.05	
Polychlorinated Biphenyls																									
Aroclor 1016	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
Aroclor 1221	mg/kg	0.1										<0.1	<0.1	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	-	-	-	<0.1	
Aroclor 1232	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
Aroclor 1242	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
Aroclor 1248	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
Aroclor 1254	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
Aroclor 1260	mg/kg	0.1										<0.5	<0.5	-	<0.5	-	<0.5	<0.5	<0.5	<0.5	-	-	-	<0.5	
PCBs (Sum of total)	mg/kg	0.1	7 ^{ns}									<0.5	<0.5	<0.1	<0.5	-	<0.5	<0.5	<0.5	<0.5	<0.1	-	-	-	<0.5
Particle Size																									
<2mm Fraction	g	0.005										-	-	-	-	-	-	-	-	-	-	-	86	-	
>2mm Fraction	g	0.005										-	-	-	-	-	-	-	-	-	-	-	15	-	
Analysed Material	%	0.1										-	-	-	-	-	-	-	-	-	-	-	86	-	
Extraneous Material	%	0.1										-	-	-	-	-	-	-	-	-	-	-	14	-	
Asbestos																									
Asbestos Reported Result	Comment											-	-	-	-	non-detected ⁽²⁾	-	-	-	-	-	-	-	-	
(n:2) Fluorotelomer Sulfonic Acids																									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0005	-	<0.005	
6:2 Fluorotelomer Sulfonate (6:2 FTS)	mg/kg	0.0005										-	-	-	<0.01	-	<0.01	-	-	-	<0.01	<0.0005	-	<0.01	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0005	-	<0.005	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0005	-	<0.005	
Perfluoroalkane Carboxylic Acids																									
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0002	-	<0.005	
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0002	-	<0.005	
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0002	-	<0.005	
Perfluorobutanoic acid (PFBA)	mg/kg	0.001										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.001	-	<0.005	
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0005	-	<0.005	
Perfluorononanoic acid (PFNA)	mg/kg	0.0002										-	-	-	<0.005	-	<0.005	-	-	-	<0.005	<0.0002	-	<0.005	
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002										-	-	-	<0.005	-	<0								

Table 1: Soil Results Test Pits and Soil Bores



										Location Code	TP114		TP115						TP116	TP117	TP119	
										Field ID	TP114_3.7-3.8	TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.0-3.1	TP115_3.0-3.1_F	TP115_3.6-3.7	TP115_3.6-3.7	TP116_3.3-3.4	TP117_1.8-1.9	TP119_2.4-2.5	TP119_3.7-3.8	
										Date	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	01-11-18	01-11-18		
										Depth	3.7 - 3.8	3.7 - 3.8	2.4 - 2.5	3 - 3.1	3 - 3.1	3.6 - 3.7	3.6 - 3.7	3.3 - 3.4	1.8 - 1.9	2.4 - 2.5	3.7 - 3.8	
										Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal		
										Lab Report No.	625350	626298	626298	626298	626298	625350	626298	625350	625350	626499	626499	
		Unit	EQL	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial	Interim soil – ecological indirect exposure - Industrial / commercial											
				0-1m	1-2m	2-4m	>=4m															
Organophosphorus Pesticides																						
Azinophos Methyl	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Bolstar (Sulprofos)	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Bromophos-ethyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
Carbophenothion	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
Chlorfenvinphos	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Chlorpyrifos	mg/kg	0.05	2000								-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Chlorpyrifos-methyl	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Coumaphos	mg/kg	2									-	<2	<2	-	-	<2	-	-	<2	<2		
Demeton-O	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Demeton-S	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Demeton-S-methyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
Diazinon	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Dichlorvos	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Dimethoate	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Disulfoton	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Ethion	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Ethoprop	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Fenitrothion	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Fensulfothion	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Fenthion	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Malathion	mg/kg	0.05									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Merphos	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Methyl parathion	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Mevinphos (Phosdrin)	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Monocrotophos	mg/kg	0.2									-	<2	<2	-	-	<2	-	-	<2	<2		
Naled (Dibrom)	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Omethoate	mg/kg	2									-	<2	<2	-	-	<2	-	-	<2	<2		
Phorate	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Prothiofos	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
Pyrazophos	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Ronnel	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Terbufos	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Tetrachlorvinphos	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Trichloronate	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Pesticides																						
Fenamiphos	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
EPN	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Parathion	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Pirimiphos-methyl	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Pirimphos-ethyl	mg/kg	0.05									-	-	-	-	-	-	-	-	-	-		
Herbicides																						
Tokuthion	mg/kg	0.2									-	<0.2	<0.2	-	-	<0.2	-	-	<0.2	<0.2		
Fungicides																						
Hexachlorobenzene	mg/kg	0.05	80								-	<0.05	<0.05	-	-	<0.05	-	-	<0.05	<0.05		
Polychlorinated Biphenyls																						
Aroclor 1016	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Aroclor 1221	mg/kg	0.1									-	<0.1	<0.1	-	-	<0.1	-	-	<0.1	<0.1		
Aroclor 1232	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Aroclor 1242	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Aroclor 1248	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Aroclor 1254	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Aroclor 1260	mg/kg	0.1									-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
PCBs (Sum of total)	mg/kg	0.1	7 ^{ns}								-	<0.5	<0.5	-	-	<0.5	-	-	<0.1	<0.1		
Particle Size																						
<2mm Fraction	g	0.005									76	-	-	-	-	120	-	73	50	-	-	
>2mm Fraction	g	0.005									0.68	-	-	-	-	0.080	-	0.94	46	-	-	
Analysed Material	%	0.1									99	-	-	-	-	100	-	99	52	-	-	
Extraneous Material	%	0.1									0.9	-	-	-	-	<0.1	-	1.3	48	-	-	
Asbestos																						
Asbestos Reported Result	Comment																					
(n:2) Fluorotelomer Sulfonic Acids																						
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/kg	0.0005									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
6:2 Fluorotelomer Sulfonate (6:2 FTS)	mg/kg	0.0005									-	-	<0.01	-	-	-	-	-	<0.01	-	-	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/kg	0.0005									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/kg	0.0005									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluoroalkane Carboxylic Acids																						
Perfluorohexanoic acid (PFHxA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluoroheptanoic acid (PFHpA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorododecanoic acid (PFDoDA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorobutanoic acid (PFBA)	mg/kg	0.001									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorotetradecanoic acid (PFTeDA)	mg/kg	0.0005									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorononanoic acid (PFNA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluoropentanoic acid (PFPeA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorodecanoic acid (PFDA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluoroundecanoic acid (PFUnDA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorotridecanoic acid (PFTrDA)	mg/kg	0.0002									-	-	<0.005	-	-	-	-	-	<0.005	-	-	
Perfluorooctanoic acid (PFOA)	mg/kg	0.0002								50 ¹⁹	-	-	<0.005	-	-	-	-	-	<0.005	-	-	

Table 1: Soil Results Test Pits and Soil Bores



Location Code		SB03				SB04	SB05		TP101		TP102			TP105	
Field ID		SB03_0.7-0.8	SB03_1.9-2.0	SB03_2.7-2.8	SB03_3.9-4.0	SB04_0.1-0.2	SB05_1.9-2.0	SB05_2.5-2.6	TP101_0.4-0.5	TP101_SS	TP102_1.0-1.1	TP102_1.6-1.7	TP102_SS	TP105_0.4-0.5	TP105_SS
Date		01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18
Depth		0.7 - 0.8	1.9 - 2	2.7 - 2.8	3.9 - 4	0.1 - 0.2	1.9 - 2	2.5 - 2.6	0.4 - 0.5	0	1 - 1.1	1.6 - 1.7	0	0.4 - 0.5	0
Sample Type		Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.		626499	626499	626499	626499	626499	626499	626499	626280	626280	626280	626280	626280	626280	626280
	Unit	EQL	NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial	Interim soil – ecological indirect exposure - Industrial / commercial				
				0-1m	1-2m	2-4m	>=4m								
Perfluoroalkane Sulfonic Acids															
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002									0.14 ^{#20}	-	-	-	<0.005
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002										-	-	-	<0.005
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002										-	-	-	<0.005
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002										-	-	-	<0.005
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002										-	-	-	<0.005
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002										-	-	-	<0.005
Sum of PFHxS and PFOS	mg/kg	0.0002								20 ^{#19}		-	-	-	<0.005
Perfluoroalkyl Sulfonamides															
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005										-	-	-	<0.005
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005										-	-	-	<0.005
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005										-	-	-	<0.005
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005										-	-	-	<0.005
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	mg/kg	0.0002										-	-	-	<0.01
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	mg/kg	0.0002										-	-	-	<0.01
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002										-	-	-	<0.005
PFAS															
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	mg/kg	0.005										-	-	-	<0.005
Sum of US EPA PFAS (PFOS + PFOA)*	mg/kg	0.005										-	-	-	<0.005
Sum of PFAS	mg/kg	0.0002										-	-	-	<0.05
Sum of PFAS (WA DER List)	mg/kg	0.0002										-	-	-	<0.01

Table 1: Soil Results Test Pits and Soil Bores



										Location Code	TP106			TP107		TP111		TP113								
										Field ID	TP106_0.8-0.9	QC101_0.8-0.9	QC201_0.8-0.9	TP107_0.5-0.6	TP107_0.6-0.7	TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	QC103_0.2-0.3	QC203_0.2-0.3	QC104_1.1-1.2	QC204_1.1-1.2	TP113_1.6-1.7	TP114_1.4-1.5		
										Date	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	31-10-18	
										Depth	0.8 - 0.9	0.8 - 0.9	0.8 - 0.9	0.5 - 0.6	0.6 - 0.7	1.8 - 1.9	2.1 - 2.2	0.2 - 0.3	0.2 - 0.3	0.2 - 0.3	1.1 - 1.2	1.1 - 1.2	1.6 - 1.7	1.4 - 1.5		
										Sample Type	Normal	Field_D	Interlab_D	Normal	Normal	Normal	Normal	Normal	Field_D	Interlab_D	Field_D	Interlab_D	Normal	Normal		
										Lab Report No.	626280	626280	ES1832601	626280	626280	626298	626298	626298	626298	ES1832702	626298	ES1832702	625350	626298		
	Unit	EQL	NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)	Human health - Industrial / commercial	Interim soil – ecological indirect exposure - Industrial / commercial															
				0-1m	1-2m	2-4m	>=4m																			
Perfluoroalkane Sulfonic Acids																										
Perfluorooctanesulfonic acid (PFOS)	mg/kg	0.0002								0.14 ^{#20}	-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	0.0012	-	<0.005		
Perfluoropentane sulfonic acid (PFPeS)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0002	-	<0.005		
Perfluorohexane sulfonic acid (PFHxS)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	0.0003	-	<0.005		
Perfluoroheptane sulfonic acid (PFHpS)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0002	-	<0.005		
Perfluorodecanesulfonic acid (PFDS)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0002	-	<0.005		
Perfluorobutane sulfonic acid (PFBS)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0002	-	<0.005		
Sum of PFHxS and PFOS	mg/kg	0.0002								20 ^{#19}	-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	0.0015	-	<0.005		
Perfluoroalkyl Sulfonamides																										
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	mg/kg	0.0005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0005	-	<0.005		
N-Methyl perfluorooctane sulfonamide (MeFOSA)	mg/kg	0.0005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0005	-	<0.005		
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	mg/kg	0.0005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0005	-	<0.005		
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	mg/kg	0.0005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0005	-	<0.005		
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	mg/kg	0.0002									-	-	-	<0.01	-	<0.01	-	-	-	-	<0.01	<0.0002	-	<0.01		
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	mg/kg	0.0002									-	-	-	<0.01	-	<0.01	-	-	-	-	<0.01	<0.0002	-	<0.01		
Perfluorooctane sulfonamide (FOSA)	mg/kg	0.0002									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	<0.0002	-	<0.005		
PFAS																										
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	mg/kg	0.005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	-	-	<0.005		
Sum of US EPA PFAS (PFOS + PFOA)*	mg/kg	0.005									-	-	-	<0.005	-	<0.005	-	-	-	-	<0.005	-	-	<0.005		
Sum of PFAS	mg/kg	0.0002									-	-	-	<0.05	-	<0.05	-	-	-	-	<0.05	0.0015	-	<0.05		
Sum of PFAS (WA DER List)	mg/kg	0.0002									-	-	-	<0.01	-	<0.01	-	-	-	-	<0.01	0.0015	-	<0.01		

[illegible]

#1 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability may be important and should be considered where appropriate (refer Schedule B7).

#2 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.

#3 Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.

#4 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing

#5 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)

#6 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken

#7 Derived soil HSL exceeds soil saturation concentration

#8 NEPC (2013) EIL - Commercial and Industrial. Value applies to aged arsenic (contamination present in soil for at least two years). For fresh contamination refer Schedule B7 of the NEPM.

#9 NEPC (2013) EIL - Commercial and Industrial. Value is for chromium III. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.

#10 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.

#11 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded. Assumes ABC of 30 mg/kg

#12 NEPC (2013) ESL - Commercial and Industrial. Coarse soil value adopted for initial screening.

#13 NEPC (2013) ESL - Commercial and Industrial. Fine soil value (most conservative) adopted for initial screening.

#14 ESL for TRH F1 adopted for this historical fraction. Where F1 data are available, screening based on this fraction is not required.

#15 ESL for TRH >C10-C16 adopted for this historical fraction. Where >C10-C16 data are available, screening based on this fraction is not required.

#16 ESL for coarse soil adopted for initial screening.

#17 NEPC (2013) ESL - Commercial and Industrial. Value applies to both coarse and fine soil.

#18 NEPC (2013) EIL - Commercial and Industrial. Value applies to both fresh and aged contamination.

#19 Based on 20% of FSNZ TDI, i.e. up to 80% of exposure is assumed to come from other pathways.

#20 Canadian Federal Environment Quality Guidelines (Feb 2017)

#21 No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

#22 n/a

#23 Chrysotile asbestos detected.

Table 2: Soil Results Surface Samples and Stockpile Samples



								Location Code	SP13	SP14	SP15	SP16	SP17	SP18	SP19	SP20	SS01	SS02	SS03	SS04	SS05		
								Field ID	SP13_01112018	SP14_01112018	SP15_01112018	SP16_01112018	SP17_01112018	SP18_01112018	SP19_01112018	SP20_01112018	SS01_0.0-0.1	SS02_0.0-0.1	SS03_0.0-0.1	SS04_0.0-0.1	SS05_0.0-0.1	SS05_F	
								Date	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	
								Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Fragment	
								Lab Report No.	625685	625685	625685	625685	625685	625685	625685	625685	626280	626280	626280	626280	626280	626280	
	Unit	EQL	NEPC 2013 Table 1A(1) HILS Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)														
				0-1m	1-2m	2-4m	>=4m																
Physical Parameters																							
Moisture Content	%	1							2.8	1.9	5.5	6.9	9.7	4.1	4.7	4.9	5.0	7.6	5.4	6.5	10.0	-	
Metals																							
Arsenic	mg/kg	2	3000 ^{#1}					160 ^{#8}	9.2	8.8	11	13	14	5.0	2.5	3.3	2.8	4.2	<2	<2	3.0	-	
Cadmium	mg/kg	0.4	900						<0.4	<0.4	<0.4	<0.4	0.6	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	-	
Chromium	mg/kg	2						320 ^{#9}	10	9.3	14	21	24	12	9.5	7.6	12	16	32	6.3	10	-	
Copper	mg/kg	5	240000					95 ^{#10}	31	33	14	15	83	15	9.1	12	23	11	48	8.8	6.2	-	
Lead	mg/kg	5	1500 ^{#2}					1830 ^{#11}	20	19	9.9	20	390	25	39	44	13	31	<5	17	12	-	
Mercury	mg/kg	0.1	730 ^{#3}						<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
Nickel	mg/kg	2	6000					60 ^{#10}	33	36	<5	<5	13	6.4	<5	<5	11	<5	170	16	<5	-	
Zinc	mg/kg	5	400000					150 ^{#10}	120	190	6.1	14	420	39	57	50	51	38	86	27	16	-	
BTEX																							
Benzene	mg/kg	0.1		3	3	3	3	75 ^{#12}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
Toluene	mg/kg	0.1	NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}	135 ^{#12}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
Ethylbenzene	mg/kg	0.1	NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}	165 ^{#12}	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
Xylene (m & p)	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	
Xylene (o)	mg/kg	0.1							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	
Total Xylene	mg/kg	0.3		230	NL ^{#7}	NL ^{#7}	NL ^{#7}	95 ^{#13}	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	<0.3	-	
Total BTEX	mg/kg	0.2							-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Total Petroleum Hydrocarbons																							
C6-C9 Fraction	mg/kg	10						215 ^{#14}	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-	
C10-C14 Fraction	mg/kg	20						170 ^{#15}	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-	
C15-C28 Fraction	mg/kg	50							<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	
C29-C36 Fraction	mg/kg	50							<50	<50	<50	<50	<50	52	<50	<50	<50	<50	53	<50	<50	-	
C10-C36 Fraction (Sum)	mg/kg	50							<50	<50	<50	<50	<50	52	<50	<50	<50	<50	53	<50	<50	-	
Total Recoverable Hydrocarbons																							
C6-C10 Fraction	mg/kg	10							700	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-	
C6-C10 Fraction minus BTEX (F1)	mg/kg	10		260	370	630	NL ^{#7}	215	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20	-	
>C10-C16 Fraction	mg/kg	50						170	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50		NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}		<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	<50	-	
>C16-C34 Fraction	mg/kg	100						1700 ^{#16}	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	
>C34-C40 Fraction	mg/kg	100						3300 ^{#16}	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	
>C10-C40 Fraction (Sum)	mg/kg	50							<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	<100	-	
PAHs																							
Acenaphthene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Acenaphthylene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Anthracene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(a)anthracene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(a)pyrene	mg/kg	0.5						1.4 ^{#17}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.4	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(b+j)fluoranthene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(g,h,i)perylene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.1	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(k)fluoranthene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Chrysene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Dibenz(a,h)anthracene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Fluoranthene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Fluorene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Naphthalene	mg/kg	0.5		NL ^{#7}	NL ^{#7}	NL ^{#7}	NL ^{#7}	370 ^{#18}	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Phenanthrene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Pyrene	mg/kg	0.5							<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.0	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5		40 ^{#4}					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	1.8	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5		4000 ^{#5}					<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.5	8.8	<0.5	<0.5	<0.5	<0.5	<0.5	-	
Organochlorine Pesticides																							
a-BHC	mg/kg	0.05							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<></						

Table 2: Soil Results Surface Samples and Stockpile Samples



Location Code		SP01	SP02					SP03	SP04	SP05	SP06	SP07	SP08	SP09	SP10	SP11	SP12
Field ID		SP01_01112018	SP02_01112018	QC105_01112018	QC205_01112018	SP02_01112018_F	SP05_01112018_F	SP03_01112018	SP04_01112018	SP05_01112018	SP06_01112018	SP07_01112018	SP08_01112018	SP09_01112018	SP10_01112018	SP11_01112018	SP12_01112018
Date		01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18
Sample Type		Normal	Normal	Field_D	Interlab_D	Fragment	Fragment	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal
Lab Report No.		625685	625685	626499	ES1832703	626499	626499	625685	625685	625685	625685	625685	625685	625685	625685	625685	625685
	Unit	EQL	NEPC 2013 Table 1A(1) HILS Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)								
				0-1m	1-2m	2-4m	>=4m										
Coumaphos	mg/kg	2							<2	<2	<2	-	-	-	<2	<2	<2
Demeton-O	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Demeton-S	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Demeton-S-methyl	mg/kg	0.05							-	-	-	-	-	-	-	-	-
Diazinon	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Dichlorvos	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Dimethoate	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Disulfoton	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Ethion	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Ethoprop	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Fenitrothion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Fensulfothion	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Fenthion	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Malathion	mg/kg	0.05							<0.2	<0.2	<0.2	<0.05	-	-	<0.2	<0.2	<0.2
Merphos	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Methyl parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Mevinphos (Phosdrin)	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Monocrotophos	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Naled (Dibrom)	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Omethoate	mg/kg	2							<2	<2	<2	<2	<2	<2	<2	<2	<2
Phorate	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Prothiofos	mg/kg	0.05							-	-	-	<0.05	-	-	-	-	-
Pyrazophos	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Ronnel	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Terbufos	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Tetrachlorvinphos	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Trichloronate	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Pesticides																	
Fenamiphos	mg/kg	0.05							-	-	-	<0.05	-	-	-	-	-
EPN	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Parathion	mg/kg	0.2							<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Pirimiphos-methyl	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Pirimiphos-ethyl	mg/kg	0.05							-	-	-	<0.05	-	-	-	-	-
Herbicides																	
Tokuthion	mg/kg	0.2							<0.2	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2
Fungicides																	
Hexachlorobenzene	mg/kg	0.05	80						<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Polychlorinated Biphenyls																	
Aroclor 1016	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1221	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1232	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1242	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1248	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1254	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
Aroclor 1260	mg/kg	0.1							<0.1	<0.1	<0.1	-	-	-	<0.1	<0.1	<0.1
PCBs (Sum of total)	mg/kg	0.1	7 ⁹⁵						<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Asbestos																	
Asbestos Reported Result									non-detected ¹¹⁸	non-detected ¹¹⁹	-	-	detected ¹²⁰	detected ¹²⁰	non-detected ¹¹⁹	non-detected ¹¹⁹	non-detected ¹¹⁹

Table 2: Soil Results Surface Samples and Stockpile Samples

								Location Code	SP13	SP14	SP15	SP16	SP17	SP18	SP19	SP20	SS01	SS02	SS03	SS04	SS05	
								Field ID	SP13_01112018	SP14_01112018	SP15_01112018	SP16_01112018	SP17_01112018	SP18_01112018	SP19_01112018	SP20_01112018	SS01_0.0-0.1	SS02_0.0-0.1	SS03_0.0-0.1	SS04_0.0-0.1	SS05_0.0-0.1	SS05_F
								Date	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	01-11-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18	30-10-18
								Sample Type	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Normal	Fragment
								Lab Report No.	625685	625685	625685	625685	625685	625685	625685	625685	626280	626280	626280	626280	626280	626280
	Unit	EQL	NEPC 2013 Table 1A(1) HILs Comm/Ind D Soil	NEPC 2013 Table 1A(3) Comm/Ind D Soil HSL for Vapour Intrusion, Sand				NEPC 2013 - Maintenance of Ecosystems - Commercial / Industrial	NEPC 2013 TPH Management Limits - Commercial / Industrial (Coarse)													
				0-1m	1-2m	2-4m	>=4m															
Coumaphos	mg/kg	2								<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
Demeton-O	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Demeton-S	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Demeton-S-methyl	mg/kg	0.05								-	-	-	-	-	-	-	-	-	-	-	-	-
Diazinon	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Dichlorvos	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Dimethoate	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Disulfoton	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Ethion	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Ethoprop	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Fenitrothion	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Fensulfothion	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Fenthion	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Malathion	mg/kg	0.05								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Merphos	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Methyl parathion	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Mevinphos (Phosdrin)	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Monocrotophos	mg/kg	0.2								<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
Naled (Dibrom)	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Omethoate	mg/kg	2								<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	-
Phorate	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Prothiophos	mg/kg	0.05								-	-	-	-	-	-	-	-	-	-	-	-	-
Pyrazophos	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Ronnel	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Terbufos	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Tetrachlorvinphos	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Trichloronate	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Pesticides																						
Fenamiphos	mg/kg	0.05								-	-	-	-	-	-	-	-	-	-	-	-	-
EPN	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Parathion	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Pirimiphos-methyl	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Pirimphos-ethyl	mg/kg	0.05								-	-	-	-	-	-	-	-	-	-	-	-	-
Herbicides																						
Tokuthion	mg/kg	0.2								<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-
Fungicides																						
Hexachlorobenzene	mg/kg	0.05	80							<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-
Polychlorinated Biphenyls																						
Aroclor 1016	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1221	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1232	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1242	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1248	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1254	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Aroclor 1260	mg/kg	0.1								<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
PCBs (Sum of total)	mg/kg	0.1	7 ^{ns}							<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	-	-	-	-	-	-
Asbestos																						
Asbestos Reported Result										non-detected ^{#18}	non-detected ^{#19}	non-detected ^{#18}	non-detected ^{#18}	non-detected ^{#19}	non-detected ^{#19}	non-detected ^{#18}	non-detected ^{#19}	non-detected ^{#19}	non-detected ^{#19}	non-detected ^{#19}	non-detected ^{#19}	detected ^{#20}

Comments

- #1 Arsenic: HIL assumes 70% oral bioavailability. Site-specific bioavailability maybe important and should be considered where appropriate (refer Shedule B7).
- #2 Lead: HILs A,B,C based on blood lead models (IEUBK & HIL D on adult lead model for where 50% bioavailability considered. Site-specific bioavailability should be considered where appropriate.
- #3 Elemental mercury: HIL does not address elemental mercury. a site specific assessment should be considered if elemental mercury is present, or suspected to be present.
- #4 Carcinogenic PAHs: HIL based on 8 carc. PAHs & their TEFs (rel to BaP ref Schedule 7) BaP TEQ calc by multiplying the conc of each carc. PAH in sample by its BaP TEF (ref Table 1A(1)) & summing
- #5 Total PAHs: Based on sum of 16 most common reported (WHO 98). HIL application should consider presence of carcinogenic PAHs (should meet BaP TEQ HIL) & naphthalene (should meet relevant HSL)
- #6 PCBs: HIL refers to non-dioxin like PCBs only. Where PCB source is known, or suspected at a site, a site-specific assessment of exposure to all PCBs (inc dioxin like PCBs) should be undertaken
- #7 Derived soil HSL exceeds soil saturation concentration
- #8 NEPC (2013) EIL - Commercial and Industrial. Value applies to aged arsenic (contamination present in soil for at least two years). For fresh contamination refer Schedule B7 of the NEPM.
- #9 NEPC (2013) EIL - Commercial and Industrial. Value is for chromium III. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
- #10 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded.
- #11 NEPC (2013) EIL - Commercial and Industrial. Initial screening value applicable to all aged soils (see text). Derive site-specific value if contamination is fresh (<2 years) or if EILs are exceeded. Assumes ABC of 30 mg/kg
- #12 NEPC (2013) ESL - Commercial and Industrial. Coarse soil value adopted for initial screening.
- #13 NEPC (2013) ESL - Commercial and Industrial. Fine soil value (most conservative) adopted for initial screening.
- #14 ESL for TRH F1 adopted for this historical fraction. Where F1 data are available, screening based on this fraction is not required.
- #15 ESL for TRH >C10-C16 adopted for this historical fraction. Where >C10-C16 data are available, screening based on this fraction is not required.
- #16 ESL for coarse soil adopted for initial screening.
- #17 NEPC (2013) ESL - Commercial and Industrial. Value applies to both coarse and fine soil.
- #18 NEPC (2013) EIL - Commercial and Industrial. Value applies to both fresh and aged contamination.
- #19 No asbestos detected at the reporting limit of 0.01% w/w.Organic fibre detected.No respirable fibres detected.
- #20 Chrysotile asbestos detected.

Table 3: Groundwater Results



Location Code	MW01	MW03		MW04	MW05
Field ID	MW01	MW03	QC101_13112018	QC201_13112018	
Date	13-11-18	13-11-18	13-11-18	13-11-18	13-11-18
Sample Type	Normal	Normal	Field_D	Interlab_D	Normal
Lab Report No.	627467	627467	627467	ES1833894	627467

	Unit	EQL	NEPM 2013 Table 1C GILs, Drinking Water	Human health - Drinking water	Human health - Recreational water	Maintenance of Ecosystems - 95% Protection - Freshwater	Freshwater - 99% species protection - slightly to moderately disturbed systems	Freshwater - 99% species protection - high conservation value systems						
Halogenated Benzenes														
1,2,3-Trichlorobenzene	µg/L	5	30			3 ⁹⁶			-	-	-	<5	-	-
1,2-Dichlorobenzene	µg/L	1	1500			160 ⁹³			<1	<1	<1	<5	<2	<1
1,2,4-Trichlorobenzene	µg/L	5	30			85 ⁹⁶			-	-	-	<5	-	-
1,3-Dichlorobenzene	µg/L	1				260 ⁹³			<1	<1	<1	<5	<2	<1
2-Chlorotoluene	µg/L	5							-	-	-	<5	-	-
1,4-Dichlorobenzene	µg/L	1	40			60 ⁹³			<1	<1	<1	<5	<2	<1
4-Chlorotoluene	µg/L	1							<1	<1	<1	<5	<2	<1
Bromobenzene	µg/L	1							<1	<1	<1	<5	<2	<1
Chlorobenzene	µg/L	1	300			55 ⁹⁷			<1	<1	<1	<5	<2	<1
Halogenated Hydrocarbons														
1,2-Dibromoethane	µg/L	1							<1	<1	<1	<5	<2	<1
Bromomethane	µg/L	1	1						<1	<1	<1	<50	<2	<1
Dichlorodifluoromethane	µg/L	1							<1	<1	<1	<50	<2	<1
Iodomethane	µg/L	1							<1	<1	<1	<5	<2	<1
Trichlorofluoromethane	µg/L	1							<1	<1	<1	<50	<2	<1
Chlorinated Hydrocarbons														
1,1-Dichloropropene	µg/L	5							-	-	-	<5	-	-
1,1-Dichloroethane	µg/L	1							<1	<1	<1	<5	<2	<1
1,1-Dichloroethene	µg/L	1	30			90 ⁹⁷			<1	<1	<1	<5	<2	<1
1,1,1,2-Tetrachloroethane	µg/L	1				700 ⁹⁷			<1	<1	<1	<5	<2	<1
1,1,1-Trichloroethane	µg/L	1				270 ⁹⁷			<1	<1	<1	<5	<2	<1
1,2-Dibromo-3-chloropropane	µg/L	5							-	-	-	<5	-	-
1,1,2-Trichloroethane	µg/L	1				6500 ⁹³			<1	<1	<1	<5	<2	<1
1,1,2,2-Tetrachloroethane	µg/L	1				400 ⁹⁷			<1	<1	<1	<5	<2	<1
1,3-Dichloropropane	µg/L	1				1100 ⁹⁷			<1	<1	<1	<5	<2	<1
1,2,3-Trichloropropane	µg/L	1							<1	<1	<1	<5	<2	<1
1,2-Dichloroethane	µg/L	1	3			1900 ⁹⁷			<1	<1	<1	<5	<2	<1
1,2-Dichloropropane	µg/L	1				900 ⁹⁷			<1	<1	<1	<5	<2	<1
2,2-Dichloropropane	µg/L	5							-	-	-	<5	-	-
Bromochloromethane	µg/L	1							<1	<1	<1	<5	<2	<1
Bromodichloromethane	µg/L	1							<1	<1	<1	<5	<2	<1
Bromoform	µg/L	1							<1	<1	<1	<5	<2	<1
Carbon Tetrachloride	µg/L	1	3			240 ⁹⁷			<1	<1	<1	<5	<2	<1
Chlorodibromomethane	µg/L	1							<1	<1	<1	<5	<2	<1
Chloroethane	µg/L	1							<1	<1	<1	<50	<2	<1
Chloroform	µg/L	5				370 ⁹⁷			<5	<5	<5	<5	<5	<5
Chloromethane	µg/L	1							<1	<1	<1	<50	<2	<1
cis-1,4-Dichloro-2-butene	µg/L	5							-	-	-	<5	-	-
cis-1,2-Dichloroethene	µg/L	1							<1	<1	<1	<5	<2	<1
Dibromomethane	µg/L	1							<1	<1	<1	<5	<2	<1
cis-1,3-Dichloropropene	µg/L	1							<1	<1	<1	<5	<2	<1
Dichloromethane	µg/L	1	4			4000 ⁹⁷			<1	<1	<1	-	<2	<1
Hexachlorobutadiene	µg/L	5	0.7			0.04 ⁹⁷			-	-	-	<5	-	-
Pentachloroethane	µg/L	5				80 ⁹⁷			-	-	-	<5	-	-
Tetrachloroethene	µg/L	1	50			70 ⁹⁷			<1	<1	<1	<5	<2	<1
trans-1,4-Dichloro-2-butene	µg/L	5							-	-	-	<5	-	-
trans-1,2-Dichloroethene	µg/L	1							<1	<1	<1	<5	<2	<1
trans-1,3-Dichloropropene	µg/L	1							<1	<1	<1	<5	<2	<1
Trichloroethene	µg/L	1				330 ⁹⁷			<1	<1	<1	<5	<2	<1
Vinyl Chloride	µg/L	1	0.3			100 ⁹⁷			<1	<1	<1	<50	<2	<1
Total Chlorinated Hydrocarbons	µg/L	5							<5	<5	<5	-	<5	<5
Total Other Chlorinated Hydrocarbons	µg/L	5							<5	<5	<5	-	<5	<5
Organochlorine Pesticides														
a-BHC	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
b-BHC	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
d-BHC	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
g-BHC (Lindane)	µg/L	0.1	10			0.2 ⁹³			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Aldrin	µg/L	0.1				0.001 ⁹⁷			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Dieldrin	µg/L	0.1				0.01 ⁹⁷			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Aldrin + Dieldrin	µg/L	0.1	0.3						<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Chlordane	µg/L	0.5	2			0.03 ⁹⁶			<1	<1	<1	<0.5	<1	<1
DDT	µg/L	0.1	9			0.006 ⁹⁶			<0.1	<0.1	<0.1	<2.0	<0.1	<0.1
4,4-DDE	µg/L	0.1				0.03 ⁹⁷			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
DDD	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
DDT+DDE+DDD	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Endosulfan I	µg/L	0.1				0.0002 ⁹⁷			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Endosulfan II	µg/L	0.1				0.007 ⁹⁷			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Endosulfan sulfate	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Endrin	µg/L	0.1				0.01 ⁹⁶			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Chlordane (cis)	µg/L	0.5							-	-	-	<0.5	-	-
Chlordane (trans)	µg/L	0.5				0.03 ⁹⁷			-	-	-	<0.5	-	-
Endrin aldehyde	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Endrin ketone	µg/L	0.1							<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Heptachlor	µg/L	0.1				0.01 ⁹⁶			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Heptachlor epoxide	µg/L	0.1	0.3						<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Methoxychlor	µg/L	0.1				0.005 ⁹⁷			<0.1	<0.1	<0.1	<2.0	<0.1	<0.1
Toxaphene	µg/L	10				0.1 ⁹⁶			<10	<10	<10	-	<10	<10
Organochlorine Pesticides (EPAVic)	µg/L	1							<1	<1	<1	-	<1	<1
Other Organochlorine Pesticides (EPAVic)	µg/L	1							<1	<1	<1	-	<1	<1

Table 3: Groundwater Results



								Location Code	MW01	MW03		MW04	MW05	
								Field ID	MW01	MW03	QC101_13112018	QC201_13112018	MW04	MW05
								Date	13-11-18	13-11-18	13-11-18	13-11-18	13-11-18	13-11-18
								Sample Type	Normal	Normal	Field_D	Interlab_D	Normal	Normal
								Lab Report No.	627467	627467	627467	ES1833894	627467	627467
	Unit	EQL	NEPM 2013 Table 1C GILs, Drinking Water	Human health - Drinking water	Human health - Recreational water	Maintenance of Ecosystems - 95% Protection - Freshwater	Freshwater - 95% species protection – slightly to moderately disturbed systems	Freshwater - 99% species protection – high conservation value systems						
Organophosphorus Pesticides														
Azinophos Methyl	µg/L	0.5	30			0.01 ^{#6}			<2	<2	<2	<0.5	<2	<2
Bolstar (Sulprofos)	µg/L	2							<2	<2	<2	-	<2	<2
Bromophos-ethyl	µg/L	0.5							-	-	-	<0.5	-	-
Carbophenothion	µg/L	0.5							-	-	-	<0.5	-	-
Chlorfenvinphos	µg/L	0.5	2						<2	<2	<2	<0.5	<2	<2
Chlorpyrifos	µg/L	0.5	10			0.01 ^{#3}			<20	<20	<20	<0.5	<20	<20
Chlorpyrifos-methyl	µg/L	0.5							<2	<2	<2	<0.5	<2	<2
Coumaphos	µg/L	20							<20	<20	<20	-	<20	<20
Demeton-O	µg/L	2							<2	<2	<2	-	<2	<2
Demeton-S	µg/L	20							<20	<20	<20	-	<20	<20
Demeton-S-methyl	µg/L	0.5				4 ^{#7}			-	-	-	<0.5	-	-
Diazinon	µg/L	0.5	4			0.01 ^{#3}			<2	<2	<2	<0.5	<2	<2
Dichlorvos	µg/L	0.5	5						<2	<2	<2	<0.5	<2	<2
Dimethoate	µg/L	0.5	7			0.15 ^{#3}			<2	<2	<2	<0.5	<2	<2
Disulfoton	µg/L	2	4						<2	<2	<2	-	<2	<2
Ethion	µg/L	0.5	4						<2	<2	<2	<0.5	<2	<2
Ethoprop	µg/L	2	1						<2	<2	<2	-	<2	<2
Fenitrothion	µg/L	2	7			0.2 ^{#3}			<2	<2	<2	-	<2	<2
Fensulfothion	µg/L	2							<2	<2	<2	-	<2	<2
Fenthion	µg/L	0.5	7						<2	<2	<2	<0.5	<2	<2
Malathion	µg/L	0.5	70			0.05 ^{#3}			<2	<2	<2	<0.5	<2	<2
Merphos	µg/L	2							<2	<2	<2	-	<2	<2
Methyl parathion	µg/L	2	0.7						<2	<2	<2	<2.0	<2	<2
Mevinphos (Phosdrin)	µg/L	2	6						<2	<2	<2	-	<2	<2
Monocrotophos	µg/L	2							<2	<2	<2	<2.0	<2	<2
Naled (Dibrom)	µg/L	2							<2	<2	<2	-	<2	<2
Omethoate	µg/L	2	1						<2	<2	<2	-	<2	<2
Phorate	µg/L	2							<2	<2	<2	-	<2	<2
Prothiotos	µg/L	0.5							-	-	-	<0.5	-	-
Pyrazophos	µg/L	2							<2	<2	<2	-	<2	<2
Ronnel	µg/L	2							<2	<2	<2	-	<2	<2
Terbufos	µg/L	2							<2	<2	<2	-	<2	<2
Tetrachlorvinphos	µg/L	2							<2	<2	<2	-	<2	<2
Trichloronate	µg/L	2							<2	<2	<2	-	<2	<2
Pesticides														
Fenamiphos	µg/L	0.5	0.5						-	-	-	<0.5	-	-
EPN	µg/L	2							<2	<2	<2	-	<2	<2
Parathion	µg/L	2	20			0.004 ^{#3}			<2	<2	<2	<2.0	<2	<2
Pirimiphos-methyl	µg/L	20	90						<20	<20	<20	-	<20	<20
Pirimphos-ethyl	µg/L	0.5							-	-	-	<0.5	-	-
Herbicides														
Tokuthion	mg/L	0.002							<0.002	<0.002	<0.002	-	<0.002	<0.002
Fungicides														
Hexachlorobenzene	µg/L	0.1				0.05 ^{#7}			<0.1	<0.1	<0.1	<0.5	<0.1	<0.1
Phthalates														
Bis(2-ethylhexyl) Phthalate	µg/L	5	10			1 ^{#7}			<5	<5	<5	<10	<5	<5
Butyl Benzyl Phthalate	µg/L	2							<5	<5	<5	<2	<5	<5
Diethyl Phthalate	µg/L	2				1000 ^{#3}			<5	<5	<5	<2	<5	<5
Dimethyl Phthalate	µg/L	2				3700 ^{#3}			<5	<5	<5	<2	<5	<5
Dibutyl Phthalate	µg/L	2				9.9 ^{#6}			<5	<5	<5	<2	<5	<5
Di-n-octyl Phthalate	µg/L	2							<5	<5	<5	<2	<5	<5
Di(2-ethylhexyl)adipate	µg/L	2							-	-	-	<2	-	-
Phthalates (Sum)	µg/L	2							-	-	-	<2	-	-
Biological														
Faecal Coliforms	CFU/100mL	1							-	-	-	<1	-	-
Coliform	MPN/100ML								14	830	1,400	-	>24,000	>24,000
	CFU/100mL	1							-	-	-	400 ^{#18}	-	-
Thermotolerant Coliforms	MPN/100ML								<1	20	<10 ^{#18}	-	680	2,400

#1 Values calculated using hardness of 30 mg/L CaCO₃. Refer ANZECC & ARMCANZ (2000) for site specific hardness guidance

#2 Australian Government Department of Health 2017

#3 ANZECC/ARMCANZ 2000 (Protection 95%): fresh

#4 Derived by NZ NIWA (2013) using ANZECC (2000) methodology. ANZECC (2000) value was withdrawn due to calculation errors. Value is for freshwater but is used in absence of marine guideline.

#5 ANZECC/ARMCANZ 2000 (Protection 95%): freshwater. The more conservative value (As V) out of the available values for arsenic species (III and V) was adopted for initial screening purposes.

#6 ANZECC/ARMCANZ 2000 (Protection 99%): freshwater adopted for chemicals that bioaccumulate.

#7 ANZECC/ARMCANZ 2000 (Low Reliability Values): freshwater

#8 ANZECC/ARMCANZ 2000 (Low Reliability Values): freshwater for m-xylene adopted conservatively as the lowest of those available for m- and o-xylenes.

#9 CRWB (2016). Lowest of values for gasoline (C4-C12) and diesel (C8-C21) range hydrocarbons.

#10 CRWB (2016). Value for diesel (C8-C21) mixture.

#11 CRWB (2016). Value for diesel (C8-C21) mixture. No value derived for TPH >C21 as not considered soluble; diesel value used for screening.

#12 ANZECC/ARMCANZ 2000 (Low Reliability Values): 99% protection adopted for chemicals that bioaccumulate.

#13 Australian and New Zealand Guidelines for Fresh and Marine Water Quality – technical draft default guideline values

#14 Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.

#15 LOR raised due to physical properties of sample

#16 Result value is an approximate.

Table 4a: Soil RPDs



		Location Code	TP106	TP106		TP106	TP106		TP113	TP113		TP113	TP113		SP02	SP02		SP02	SP02			
		Field ID	TP106_0.8-0.9	QC101_0.8-0.9	RPD	TP106_0.8-0.9	QC201_0.8-0.9	RPD	TP113_0.2-0.3	QC103_0.2-0.3	RPD	TP113_0.2-0.3	QC203_0.2-0.3	RPD	SP02_01112018	QC105_01112018	RPD	SP02_01112018	QC205_01112018	RPD		
		Date	30-10-18	30-10-18		30-10-18	30-10-18		30-10-18	31-10-18		31-10-18	31-10-18		31-10-18	01-11-18		01-11-18	01-11-18		01-11-18	
		Sample Type	Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Field_D		Normal	Interlab_D
		Lab Report No.	626280	626280		626280	ES1832601		626298	626298		626298	ES1832702		625685	626499		625685	ES1832703			
	Unit	EQL																				
Physical Parameters																						
Moisture Content	%	1	12	16	29	12	12.4	3	17	13	27	17	13.6	22	9.8	11	12	9.8	11.1	12		
Metals																						
Arsenic	mg/kg	2	<2	2.8	33	<2	<5	0	8.7	5.0	54	8.7	6	37	13	15	14	13	10	26		
Cadmium	mg/kg	0.4	<0.4	<0.4	0	<0.4	<1	0	<0.4	<0.4	0	<0.4	<1	0	<0.4	<0.4	0	<0.4	<1	0		
Chromium	mg/kg	2	22	21	5	22	8	93	14	12	15	14	13	7	13	20	42	13	14	7		
Copper	mg/kg	5	29	28	4	29	15	64	6.9	19	93	6.9	11	46	26	38	38	26	24	8		
Lead	mg/kg	5	16	23	36	16	9	56	58	45	25	58	42	32	30	57	62	30	38	24		
Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0		
Nickel	mg/kg	2	61	46	28	61	35	54	<5	<5	0	<5	3	0	<5	11	75	<5	6	18		
Zinc	mg/kg	5	72	63	13	72	39	59	72	38	62	72	40	57	31	68	75	31	39	23		
BTEX																						
Benzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.1	0	<0.1	<0.2	0	<0.1	<0.1	0	<0.1	<0.2	0		
Toluene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0		
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0		
Xylene (m & p)	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.5	0	<0.2	<0.2	0	<0.2	<0.5	0		
Xylene (o)	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0	<0.1	<0.1	0	<0.1	<0.5	0		
Total Xylene	mg/kg	0.3	<0.3	<0.3	0	<0.3	<0.5	0	<0.3	<0.3	0	<0.3	<0.5	0	<0.3	<0.3	0	<0.3	<0.5	0		
Total BTEX	mg/kg	0.2	-	-	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	-	-	<0.2	-		
Total Petroleum Hydrocarbons																						
C6-C9 Fraction	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0		
C10-C14 Fraction	mg/kg	20	<20	<20	0	<20	<50	0	<20	<20	0	<20	<50	0	<20	<20	0	<20	<50	0		
C15-C28 Fraction	mg/kg	50	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0		
C29-C36 Fraction	mg/kg	50	59	63	7	59	<100	0	<50	<50	0	<50	<100	0	<50	<50	0	<50	<100	0		
C10-C36 Fraction (Sum)	mg/kg	50	59	63	7	59	<50	17	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0		
Total Recoverable Hydrocarbons																						
C6-C10 Fraction	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0		
C6-C10 Fraction minus BTEX (F1)	mg/kg	10	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0	<20	<20	0	<20	<10	0		
>C10-C16 Fraction	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0		
>C10-C16 Fraction minus naphthalene (F2)	mg/kg	50	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0	<50	<50	0		
>C16-C34 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0		
>C34-C40 Fraction	mg/kg	100	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0	<100	<100	0		
>C10-C40 Fraction (Sum)	mg/kg	50	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0	<100	<100	0	<100	<50	0		
PAHs																						
Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Benz(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Benzo(b+h)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.9	57	<0.5	<0.5	0	<0.5	0.8	46		
Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Naphthalene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.8	46	<0.5	<0.5	0	<0.5	<0.5	0		
Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	0.7	33	<0.5	<0.5	0	<0.5	0.7	33		
Benzo(a)pyrene TEQ (Zero)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0		
Sum of Polycyclic aromatic hydrocarbons (PAH)	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	<0.5	0	<0.5	2.4	131	<0.5	<0.5	0	<0.5	1.5	100		
Organochlorine Pesticides																						
a-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0		
b-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0		
d-BHC	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0		
g-BHC (Lindane)	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0		
Aldrin	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.0						

Table 4a: Soil RPDs



		Location Code	TP106	TP106	RPD	TP106	TP106	RPD	TP113	TP113	RPD	TP113	TP113	RPD	SP02	SP02	RPD	SP02	SP02	RPD
		Field ID	TP106_0.8-0.9	QC101_0.8-0.9		TP106_0.8-0.9	QC201_0.8-0.9		TP113_0.2-0.3	QC103_0.2-0.3		TP113_0.2-0.3	QC203_0.2-0.3		SP02_01112018	QC105_01112018		SP02_01112018	QC205_01112018	
		Date	30-10-18	30-10-18		30-10-18	30-10-18		31-10-18	31-10-18		31-10-18	31-10-18		01-11-18	01-11-18		01-11-18	01-11-18	
		Sample Type	Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D		Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	626280	626280	626280	ES1832601	626298	626298	626298	ES1832702	625685	626499	625685	ES1832703						
	Unit	EQL																		
Organophosphorus Pesticides																				
Azinophos Methyl	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Bolstar (Sulprofos)	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Bromophos-ethyl	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
Carbophenothion	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
Chlorfenvinphos	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Chlorpyrifos	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Chlorpyrifos-methyl	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Coumaphos	mg/kg	2	<2	<2	0	<2	-	-	<2	<2	0	<2	-	-	<2	<2	0	<2	-	-
Demeton-O	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Demeton-S	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Demeton-S-methyl	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
Diazinon	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Dichlorvos	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Dimethoate	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Disulfoton	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Ethion	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Ethoprop	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Fenitrothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Fensulfothion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Fenthion	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Malathion	mg/kg	0.05	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0	<0.2	<0.2	0	<0.2	<0.05	0
Merphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Methyl parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
Mevinphos (Phosdrin)	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Monocrotophos	mg/kg	0.2	<2	<2	0	<2	<0.2	0	<2	<2	0	<2	<0.2	0	<2	<2	0	<2	<0.2	0
Naled (Dibrom)	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Omethoate	mg/kg	2	<2	<2	0	<2	-	-	<2	<2	0	<2	-	-	<2	<2	0	<2	-	-
Phorate	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Prothiophos	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
Pyrazophos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Ronnel	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Terbufos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Tetrachlorvinphos	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Trichloronate	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Pesticides																				
Fenamiphos	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
EPN	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Parathion	mg/kg	0.2	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0	<0.2	<0.2	0
Pirimiphos-methyl	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Pirimiphos-ethyl	mg/kg	0.05	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-	-	-	-	-	<0.05	-
Herbicides																				
Tokuthion	mg/kg	0.2	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-	<0.2	<0.2	0	<0.2	-	-
Fungicides																				
Hexachlorobenzene	mg/kg	0.05	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0	<0.05	<0.05	0
Polychlorinated Biphenyls																				
Aroclor 1016	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1221	mg/kg	0.1	<0.1	<0.1	0	<0.1	-	-	<0.1	<0.1	0	<0.1	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1232	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1242	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1248	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1254	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
Aroclor 1260	mg/kg	0.1	<0.5	<0.5	0	<0.5	-	-	<0.5	<0.5	0	<0.5	-	-	<0.1	<0.1	0	<0.1	-	-
PCBs (Sum of total)	mg/kg	0.1	<0.5	<0.5	0	<0.5	<0.1	0	<0.5	<0.5	0	<0.5	<0.1	0	<0.1	<0.1	0	<0.1	<0.1	0

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

**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 1000 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 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

Table 4a: Groundwater RPDs



		Unit	Location Code	MW03	MW03	RPD	MW03	MW03	RPD
			Field ID	MW03	QC101_13112018		MW03	QC201_13112018	
			Date	13-11-18	13-11-18		13-11-18	13-11-18	
			Sample Type	Normal	Field_D		Normal	Interlab_D	
			Lab Report No.	627467	627467		627467	ES1833894	
Inorganics									
Phosphorus	mg/L	0.01	-	-	-	-	0.55	-	
Ammonia (as N)	mg/L	0.01	2.2	2.2	0	2.2	2.00	10	
Nitrate (as N)	mg/L	0.01	<0.02	<0.02	0	<0.02	0.17	158	
Nitrite (as N)	mg/L	0.01	<0.02	<0.02	0	<0.02	0.02	0	
Total Oxidised Nitrogen (as N)	mg/L	0.01	<0.05	<0.05	0	<0.05	0.19	117	
Total Kjeldahl Nitrogen	mg/L	0.1	2.5	2.4	4	2.5	2.2	13	
Total Nitrogen (as N)	mg/L	0.1	2.5	2.4	4	2.5	2.4	4	
Phosphate total (P)	mg/L	0.01	0.72	0.73	1	0.72	-	-	
Metals									
Arsenic (filtered)	mg/L	0.001	0.004	0.004	0	0.004	0.004	0	
Cadmium (filtered)	mg/L	0.0001	<0.0002	<0.0002	0	<0.0002	<0.0001	0	
Chromium (filtered)	mg/L	0.001	0.002	0.002	0	0.002	0.002	0	
Copper (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	0.001	0	
Lead (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.001	0	
Mercury (filtered)	mg/L	0.0001	<0.0001	<0.0001	0	<0.0001	<0.0001	0	
Nickel (filtered)	mg/L	0.001	<0.001	<0.001	0	<0.001	0.001	0	
Zinc (filtered)	mg/L	0.005	0.009	0.008	12	0.009	0.009	0	
BTEX									
Benzene	µg/L	1	<1	<1	0	<1	<1	0	
Toluene	µg/L	1	<1	<1	0	<1	<2	0	
Ethylbenzene	µg/L	1	<1	<1	0	<1	<2	0	
Xylene (m & p)	µg/L	2	<2	<2	0	<2	<2	0	
Xylene (o)	µg/L	1	<1	<1	0	<1	<2	0	
Total Xylene	µg/L	2	<3	<3	0	<3	<2	0	
Total BTEX	µg/L	1	-	-	-	-	<1	-	
Total Petroleum Hydrocarbons									
C6-C9 Fraction	µg/L	20	<20	<20	0	<20	<20	0	
C10-C14 Fraction	µg/L	50	<50	<50	0	<50	<50	0	
C15-C28 Fraction	µg/L	100	<100	<100	0	<100	<100	0	
C29-C36 Fraction	µg/L	50	<100	<100	0	<100	<50	0	
C10-C36 Fraction (Sum)	µg/L	50	<100	<100	0	<100	<50	0	
Total Recoverable Hydrocarbons									
C6-C10 Fraction	µg/L	20	<20	<20	0	<20	<20	0	
C6-C10 Fraction minus BTEX (F1)	µg/L	20	<20	<20	0	<20	<20	0	
>C10-C16 Fraction	µg/L	50	<50	<50	0	<50	<100	0	
>C10-C16 Fraction minus naphthalene (F2)	µg/L	50	<50	<50	0	<50	<100	0	
>C16-C34 Fraction	µg/L	100	<100	<100	0	<100	<100	0	
>C34-C40 Fraction	µg/L	100	<100	<100	0	<100	<100	0	
>C10-C40 Fraction (Sum)	µg/L	100	<100	<100	0	<100	<100	0	
PAHs									
Acenaphthene	µg/L	1	<1	<1	0	<1	<1.0	0	
Acenaphthylene	µg/L	1	<1	<1	0	<1	<1.0	0	
Anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	
Benz(a)anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	
Benzo(a)pyrene	µg/L	0.5	<1	<1	0	<1	<0.5	0	
Benzo(b+j)fluoranthene	µg/L	1	<1	<1	0	<1	<1.0	0	
Benzo(g,h,i)perylene	µg/L	1	<1	<1	0	<1	<1.0	0	
Benzo(k)fluoranthene	µg/L	1	<1	<1	0	<1	<1.0	0	
Chrysene	µg/L	1	<1	<1	0	<1	<1.0	0	
Dibenz(a,h)anthracene	µg/L	1	<1	<1	0	<1	<1.0	0	
Fluoranthene	µg/L	1	<1	<1	0	<1	<1.0	0	
Fluorene	µg/L	1	<1	<1	0	<1	<1.0	0	
Indeno(1,2,3-c,d)pyrene	µg/L	1	<1	<1	0	<1	<1.0	0	
Naphthalene	µg/L	1	<1	<1	0	<1	<1.0	0	
Phenanthrene	µg/L	1	<1	<1	0	<1	<1.0	0	
Pyrene	µg/L	1	<1	<1	0	<1	<1.0	0	
Benzo(a)pyrene TEQ (Zero)	µg/L	0.5	-	-	-	-	<0.5	-	
Sum of Polycyclic aromatic hydrocarbons (PAH)	µg/L	0.5	<1	<1	0	<1	<0.5	0	
MAH									
1,2,4-Trimethylbenzene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.005	0	
1,3,5-Trimethylbenzene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.005	0	
Isopropylbenzene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.005	0	
n-Butylbenzene	mg/L	0.005	-	-	-	-	<0.005	-	
n-Propylbenzene	mg/L	0.005	-	-	-	-	<0.005	-	
p-Isopropyltoluene	mg/L	0.005	-	-	-	-	<0.005	-	
sec-Butylbenzene	mg/L	0.005	-	-	-	-	<0.005	-	
tert-Butylbenzene	mg/L	0.005	-	-	-	-	<0.005	-	
Styrene	mg/L	0.001	<0.001	<0.001	0	<0.001	<0.005	0	
Total Monocyclic Aromatic Hydrocarbons	mg/L	0.003	<0.003	<0.003	0	<0.003	-	-	
Halogenated Benzenes									
1,2,3-Trichlorobenzene	µg/L	5	-	-	-	-	<5	-	
1,2-Dichlorobenzene	µg/L	1	<1	<1	0	<1	<5	0	
1,2,4-Trichlorobenzene	µg/L	5	-	-	-	-	<5	-	
1,3-Dichlorobenzene	µg/L	1	<1	<1	0	<1	<5	0	
2-Chlorotoluene	µg/L	5	-	-	-	-	<5	-	
1,4-Dichlorobenzene	µg/L	1	<1	<1	0	<1	<5	0	
4-Chlorotoluene	µg/L	1	<1	<1	0	<1	<5	0	
Bromobenzene	µg/L	1	<1	<1	0	<1	<5	0	
Chlorobenzene	µg/L	1	<1	<1	0	<1	<5	0	
Halogenated Hydrocarbons									
1,2-Dibromoethane	µg/L	1	<1	<1	0	<1	<5	0	
Bromomethane	µg/L	1	<1	<1	0	<1	<50	0	
Dichlorodifluoromethane	µg/L	1	<1	<1	0	<1	<50	0	
Iodomethane	µg/L	1	<1	<1	0	<1	<5	0	
Trichlorofluoromethane	µg/L	1	<1	<1	0	<1	<50	0	
Chlorinated Hydrocarbons									
1,1-Dichloropropene	µg/L	5	-	-	-	-	<5	-	
1,1-Dichloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,1-Dichloroethene	µg/L	1	<1	<1	0	<1	<5	0	
1,1,1,2-Tetrachloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,1,1-Trichloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,2-Dibromo-3-chloropropane	µg/L	5	-	-	-	-	<5	-	
1,1,2-Trichloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,1,2,2-Tetrachloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,3-Dichloropropane	µg/L	1	<1	<1	0	<1	<5	0	
1,2,3-Trichloropropane	µg/L	1	<1	<1	0	<1	<5	0	
1,2-Dichloroethane	µg/L	1	<1	<1	0	<1	<5	0	
1,2-Dichloropropane	µg/L	1	<1	<1	0	<1	<5	0	
2,2-Dichloropropane	µg/L	5	-	-	-	-	<5	-	
Bromochloromethane	µg/L	1	<1	<1	0	<1	-	-	
Bromodichloromethane	µg/L	1	<1	<1	0	<1	<5	0	
Bromoform	µg/L	1	<1	<1	0	<1	<5	0	
Carbon Tetrachloride	µg/L	1	<1	<1	0	<1	<5	0	
Chlorodibromomethane	µg/L	1	<1	<1	0	<1	<5	0	
Chloroethane	µg/L	1	<1	<1	0	<1	<50	0	
Chloroform	µg/L	5	<5	<5	0	<5	<5	0	
Chloromethane	µg/L	1	<1	<1	0	<1	<50	0	
cis-1,4-Dichloro-2-butene	µg/L	5	-	-	-	-	<5	-	
cis-1,2-Dichloroethene	µg/L	1	<1	<1	0	<1	<5	0	
Dibromomethane	µg/L	1	<1	<1	0	<1	<5	0	
cis-1,3-Dichloropropene	µg/L	1	<1	<1	0	<1	<5	0	
Dichloromethane	µg/L	1	<1	<1	0	<1	-	-	
Hexachlorobutadiene	µg/L	5	-	-	-	-	<5	-	
Pentachloroethane	µg/L	5	-	-	-	-	<5	-	
Tetrachloroethene	µg/L	1	<1	<1	0	<1	<5	0	
trans-1,4-Dichloro-2-butene	µg/L	5	-	-	-	-	<5	-	
trans-1,2-Dichloroethene	µg/L	1	<1	<1	0	<1	<5	0	

Table 4a: Groundwater RPDs



		Location Code	MW03	MW03	RPD	MW03	MW03	RPD
		Field ID	MW03	QC101_13112018		MW03	QC201_13112018	
		Date	13-11-18	13-11-18		13-11-18	13-11-18	
		Sample Type	Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	627467	627467		627467	ES1833894	
	Unit	EQL						
trans-1,3-Dichloropropene	µg/L	1	<1	<1	0	<1	<5	0
Trichloroethene	µg/L	1	<1	<1	0	<1	<5	0
Vinyl Chloride	µg/L	1	<1	<1	0	<1	<50	0
Total Chlorinated Hydrocarbons	µg/L	5	<5	<5	0	<5	-	-
Total Other Chlorinated Hydrocarbons	µg/L	5	<5	<5	0	<5	-	-
Organochlorine Pesticides								
a-BHC	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
b-BHC	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
d-BHC	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
g-BHC (Lindane)	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Aldrin	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Dieldrin	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Aldrin + Dieldrin	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Chlordane	µg/L	0.5	<1	<1	0	<1	<0.5	0
DDT	µg/L	0.1	<0.1	<0.1	0	<0.1	<2.0	0
4,4-DDE	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
DDD	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
DDT+DDE+DDD	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Endosulfan I	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Endosulfan II	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Endosulfan sulfate	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Endrin	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Chlordane (cis)	µg/L	0.5	-	-	-	-	<0.5	-
Chlordane (trans)	µg/L	0.5	-	-	-	-	<0.5	-
Endrin aldehyde	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Endrin ketone	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Heptachlor	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Heptachlor epoxide	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Methoxychlor	µg/L	0.1	<0.1	<0.1	0	<0.1	<2.0	0
Toxaphene	µg/L	10	<10	<10	0	<10	-	-
Organochlorine Pesticides (EPAVic)	µg/L	1	<1	<1	0	<1	-	-
Other Organochlorine Pesticides (EPAVic)	µg/L	1	<1	<1	0	<1	-	-
Organophosphorus Pesticides								
Azinophos Methyl	µg/L	0.5	<2	<2	0	<2	<0.5	0
Bolstar (Sulprofos)	µg/L	2	<2	<2	0	<2	-	-
Bromophos-ethyl	µg/L	0.5	-	-	-	-	<0.5	-
Carbophenothion	µg/L	0.5	-	-	-	-	<0.5	-
Chlorfenvinphos	µg/L	0.5	<2	<2	0	<2	<0.5	0
Chlorpyrifos	µg/L	0.5	<20	<20	0	<20	<0.5	0
Chlorpyrifos-methyl	µg/L	0.5	<2	<2	0	<2	<0.5	0
Coumaphos	µg/L	20	<20	<20	0	<20	-	-
Demeton-O	µg/L	2	<2	<2	0	<2	-	-
Demeton-S	µg/L	20	<20	<20	0	<20	-	-
Demeton-S-methyl	µg/L	0.5	-	-	-	-	<0.5	-
Diazinon	µg/L	0.5	<2	<2	0	<2	<0.5	0
Dichlorvos	µg/L	0.5	<2	<2	0	<2	<0.5	0
Dimethoate	µg/L	0.5	<2	<2	0	<2	<0.5	0
Disulfoton	µg/L	2	<2	<2	0	<2	-	-
Ethion	µg/L	0.5	<2	<2	0	<2	<0.5	0
Ethoprop	µg/L	2	<2	<2	0	<2	-	-
Fenitrothion	µg/L	2	<2	<2	0	<2	-	-
Fensulfothion	µg/L	2	<2	<2	0	<2	-	-
Fenthion	µg/L	0.5	<2	<2	0	<2	<0.5	0
Malathion	µg/L	0.5	<2	<2	0	<2	<0.5	0
Merphos	µg/L	2	<2	<2	0	<2	-	-
Methyl parathion	µg/L	2	<2	<2	0	<2	<2.0	0
Mevinphos (Phosdrin)	µg/L	2	<2	<2	0	<2	-	-
Monocrotophos	µg/L	2	<2	<2	0	<2	<2.0	0
Naled (Dibrom)	µg/L	2	<2	<2	0	<2	-	-
Omethoate	µg/L	2	<2	<2	0	<2	-	-
Phorate	µg/L	2	<2	<2	0	<2	-	-
Prothiofos	µg/L	0.5	-	-	-	-	<0.5	-
Pyrazophos	µg/L	2	<2	<2	0	<2	-	-
Ronnel	µg/L	2	<2	<2	0	<2	-	-
Terbufos	µg/L	2	<2	<2	0	<2	-	-
Tetrachlorvinphos	µg/L	2	<2	<2	0	<2	-	-
Trichloronate	µg/L	2	<2	<2	0	<2	-	-
Pesticides								
Fenamiphos	µg/L	0.5	-	-	-	-	<0.5	-
EPN	µg/L	2	<2	<2	0	<2	-	-
Parathion	µg/L	2	<2	<2	0	<2	<2.0	0
Pirimiphos-methyl	µg/L	20	<20	<20	0	<20	-	-
Pirimphos-ethyl	µg/L	0.5	-	-	-	-	<0.5	-
Herbicides								
Tokuthion	mg/L	0.002	<0.002	<0.002	0	<0.002	-	-
Fungicides								
Hexachlorobenzene	µg/L	0.1	<0.1	<0.1	0	<0.1	<0.5	0
Phthalates								
Bis(2-ethylhexyl) Phthalate	µg/L	5	<5	<5	0	<5	<10	0
Butyl Benzyl Phthalate	µg/L	2	<5	<5	0	<5	<2	0
Diethyl Phthalate	µg/L	2	<5	<5	0	<5	<2	0
Dimethyl Phthalate	µg/L	2	<5	<5	0	<5	<2	0
Dibutyl Phthalate	µg/L	2	<5	<5	0	<5	<2	0
Di-n-octyl Phthalate	µg/L	2	<5	<5	0	<5	<2	0
Di(2-ethylhexyl)adipate	µg/L	2	-	-	-	-	<2	-
Phthalates (Sum)	µg/L	2	-	-	-	-	<2	-
Biological								
Faecal Coliforms	CFU/100mL	1	-	-	-	-	<1	-
Coliform	MPN/100ML		830	1,400	51	830	-	-
	CFU/100mL	1	-	-	-	-	400	-
Thermotolerant Coliforms	MPN/100ML		20	<10	67	20	-	-
Solvents								
Methyl Ethyl Ketone (MEK)	µg/L	1	<1	<1	0	<1	<50	0
2-Hexanone (MBK)	µg/L	50	-	-	-	-	<50	-
4-Methyl-2-pentanone	µg/L	1	<1	<1	0	<1	<50	0
Acetone	µg/L	1	<1	<1	0	<1	-	-
Allyl chloride	µg/L	1	<1	<1	0	<1	-	-
Carbon disulfide	µg/L	1	<1	<1	0	<1	<5	0
Vinyl acetate	µg/L	50	-	-	-	-	<50	-
(n:2) Fluorotelomer Sulfonic Acids								
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.05	0
6:2 Fluorotelomer Sulfonate (6:2 FIS)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.05	0
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.05	0
Perfluoroalkane Carboxylic Acids								
Perfluorohexanoic acid (PFHxA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluoroheptanoic acid (PFHpA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorododecanoic acid (PFDoDA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorononanoic acid (PFNA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorobutanoic acid (PFBA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.1	0
Perfluoropentanoic acid (PFPeA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorotetradecanoic acid (PFTeDA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.05	0
Perfluorotridecanoic acid (PFTrDA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorodecanoic acid (PFDA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluoroundecanoic acid (PFUnDA)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorooctanoic acid (PFOA)	µg/L	0.01	<0.01	<0.01	0	<0.01	0.01	0

Table 4a: Groundwater RPDs



		Location Code	MW03	MW03	RPD	MW03	MW03	RPD
		Field ID	MW03	QC101_13112018		MW03	QC201_13112018	
		Date	13-11-18	13-11-18		13-11-18	13-11-18	
		Sample Type	Normal	Field_D		Normal	Interlab_D	
		Lab Report No.	627467	627467		627467	ES1833894	
	Unit	EQL						
Perfluoroalkane Sulfonic Acids								
Perfluorooctanesulfonic acid (PFOS)	µg/L	0.01	0.06	0.06	0	0.06	0.04	40
Perfluoropentane sulfonic acid (PFPeS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorohexane sulfonic acid (PFHxS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorodecanesulfonic acid (PFDS)	µg/L	0.01	<0.01	<0.01	0	<0.01	<0.02	0
Perfluorobutane sulfonic acid (PFBS)	µg/L	0.01	0.01	0.01	0	0.01	0.02	67
Sum of PFHxS and PFOS	µg/L	0.01	0.06	0.06	0	0.06	0.04	40
Perfluoroalkyl Sulfonamides								
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	0.05	<0.05	<0.05	0	<0.05	<0.05	0
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	0.02	<0.05	<0.05	0	<0.05	<0.02	0
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	0.02	<0.05	<0.05	0	<0.05	<0.02	0
Perfluorooctane sulfonamide (FOSA)	µg/L	0.02	<0.05	<0.05	0	<0.05	<0.02	0
PFAS								
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01	0.06	0.06	0	0.06	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01	0.06	0.06	0	0.06	-	-
Sum of PFAS	µg/L	0.01	<0.1	<0.1	0	<0.1	0.07	0
Sum of PFAS (WA DER List)	µg/L	0.01	0.07	0.07	0	0.07	0.07	0

*RPDs have only been considered where a concentration is greater than 1 times the EQL.
**Elevated RPDs are highlighted as per QAQC Profile settings (Acceptable RPDs for each EQL multiplier range are: 1000 (1 - 10 x EQL); 50 (10 - 20 x EQL); 30 (> 20 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

Table 5: Blanks



Field ID	QC301_13112018	QC302_13112018	QC501_13112018	QC502_13112018	QC503_01112018
Date	13-11-18	13-11-18	13-11-18	13-11-18	01-11-18
Sample Type	Trip_B	Trip_B	Rinsate	Rinsate	Rinsate
Lab Report No.	627467	627467	627467	627467	625685
Unit					
Metals					
Arsenic	mg/L	-	-	<0.001	<0.001
Cadmium	mg/L	-	-	<0.0002	<0.0002
Chromium	mg/L	-	-	<0.001	<0.001
Copper	mg/L	-	-	<0.001	<0.001
Lead	mg/L	-	-	<0.001	<0.001
Mercury	mg/L	-	-	<0.0001	<0.0001
Nickel	mg/L	-	-	<0.001	<0.001
Zinc	mg/L	-	-	<0.005	0.013
0.007					
BTEX					
Benzene	µg/L	<1	-	<1	<1
Toluene	µg/L	<1	-	<1	<1
Ethylbenzene	µg/L	<1	-	<1	<1
Xylene (m & p)	µg/L	<2	-	<2	<2
Xylene (o)	µg/L	<1	-	<1	<1
Total Xylene	µg/L	<3	-	<3	<3
(n:2) Fluorotelomer Sulfonic Acids					
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	µg/L	-	<0.01	-	<0.01
6:2 Fluorotelomer Sulfonate (6:2 FIS)	µg/L	-	<0.05	-	<0.05
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	µg/L	-	<0.01	-	<0.01
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	µg/L	-	<0.01	-	<0.01
Perfluoroalkane Carboxylic Acids					
Perfluorohexanoic acid (PFHxA)	µg/L	-	<0.01	-	<0.01
Perfluoroheptanoic acid (PFHpA)	µg/L	-	<0.01	-	<0.01
Perfluorododecanoic acid (PFDoDA)	µg/L	-	<0.01	-	<0.01
Perfluorobutanoic acid (PFBA)	µg/L	-	<0.05	-	<0.05
Perfluorononanoic acid (PFNA)	µg/L	-	<0.01	-	<0.01
Perfluoropentanoic acid (PFPeA)	µg/L	-	<0.01	-	<0.01
Perfluorotetradecanoic acid (PFTeDA)	µg/L	-	<0.01	-	<0.01
Perfluorotridecanoic acid (PFTrDA)	µg/L	-	<0.01	-	<0.01
Perfluoroundecanoic acid (PFUnDA)	µg/L	-	<0.01	-	<0.01
Perfluorodecanoic acid (PFDA)	µg/L	-	<0.01	-	<0.01
Perfluorooctanoic acid (PFOA)	µg/L	-	<0.01	-	<0.01
Perfluoroalkane Sulfonic Acids					
Perfluorooctanesulfonic acid (PFOS)	µg/L	-	<0.01	-	<0.01
Perfluoropentane sulfonic acid (PFPeS)	µg/L	-	<0.01	-	<0.01
Perfluorohexane sulfonic acid (PFHxS)	µg/L	-	<0.01	-	<0.01
Perfluoroheptane sulfonic acid (PFHpS)	µg/L	-	<0.01	-	<0.01
Perfluorodecanesulfonic acid (PFDS)	µg/L	-	<0.01	-	<0.01
Perfluorobutane sulfonic acid (PFBS)	µg/L	-	<0.01	-	<0.01
Sum of PFHxS and PFOS	µg/L	-	<0.01	-	<0.01
Perfluoroalkyl Sulfonamides					
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	µg/L	-	<0.05	-	<0.05
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	µg/L	-	<0.05	-	<0.05
N-Methyl perfluorooctane sulfonamide (MeFOSA)	µg/L	-	<0.05	-	<0.05
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	µg/L	-	<0.05	-	<0.05
N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	µg/L	-	<0.05	-	<0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	µg/L	-	<0.05	-	<0.05
Perfluorooctane sulfonamide (FOSA)	µg/L	-	<0.05	-	<0.05
PFAS					
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	-	<0.01	-	<0.01
Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	-	<0.01	-	<0.01
Sum of PFAS	µg/L	-	<0.1	-	<0.1
Sum of PFAS (WA DER List)	µg/L	-	<0.05	-	<0.05

Field ID	QC301_30102018 (TB)	QC401_30102018 (TS)*	QC302_31102018 (TB)	QC402_31102018 (TS)*
Date	30-10-18	30-10-18	31-10-18	31-10-18
Sample Type	Trip_B	Trip_S	Trip_B	Trip_S
Lab Report No.	625312	625312	625350	625350
Unit				
BTEX				
Benzene	mg/kg	<0.1	110	<0.1
Toluene	mg/kg	<0.1	110	<0.1
Ethylbenzene	mg/kg	<0.1	110	<0.1
Xylene (m & p)	mg/kg	<0.2	110	<0.2
Xylene (o)	mg/kg	<0.1	110	<0.1
Total Xylene	mg/kg	<0.3	110	<0.3
82				

* Reported as revoery percentage (%)



Appendix A: Site Photographs



AirTrunk Phase 2 - Site Photographs



Photo 1. View of the of access road from the eastern site entry.



Photo 2. View of the central portion of the site.



Photo 3. View of the northern portion of the site.



Photo 4. Tarred section of the access road.



Photo 5. Stockpiles in the centre of the site and disused excavator.



Photo 6. Stockpiled material.



Photo 7. Signage on the western boundary fence.



Photo 8. Sediment controls on the western boundary.



Photo 9. Engineered drainage.



Photo 10. Southern perimeter of the site.



Photo 11. Abandoned equipment in the eastern portion of the site.



Photo 12. South-eastern boundary of the site.



Appendix B: Borelogs

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 2/11/18

COMPLETED 2/11/18

R.L. SURFACE 25.952

DATUM m

DRILLING CONTRACTOR Matrix Drilling

R.L. CASING 26.79

EQUIPMENT Hand-Auger and Air Hammer

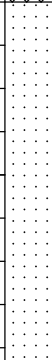
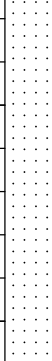
HOLE LOCATION (Easting, Northing) 328256.89, 6257540.77

HOLE SIZE 100 mm

LOGGED BY RM

CHECKED BY SK

NOTES 50 mm groundwater well installed.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING		
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
HA				25	1		ASPHALT	Asphalt.				
							FILL	FILL: Brown mottled red, medium to coarse, silty sand with trace gravel. Well graded, sub-rounded sand and angular to sub-angular gravel. Anthropogenic material including: brick fragments.				
AIR				24	2			Grading to yellow brown, trace sandstone cobbles. (No brick fragments present.)	D	No odour / staining observed.	0	MW01_0.9 - 1.0
							SST	SANDSTONE: Red brown, medium to coarse sand. Poorly graded, sub-rounded to rounded sand.				
				23	3							
				22	4							
				21	5							
				20	6							
				19	7							

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment
PROJECT NUMBER S16913
PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW
DATE STARTED 2/11/18
COMPLETED 2/11/18
R.L. SURFACE 25.952
DATUM m
DRILLING CONTRACTOR Matrix Drilling
R.L. CASING 26.79
EQUIPMENT Hand-Auger and Air Hammer
HOLE LOCATION (Easting, Northing) 328256.89, 6257540.77
HOLE SIZE 100 mm
LOGGED BY RM
CHECKED BY SK
NOTES 50 mm groundwater well installed.

DRILLING							FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
AIR				18	8		SST	SANDSTONE: Red brown, medium to coarse sand. Poorly graded, sub-rounded to rounded sand. <i>(continued)</i>	D	No odour / staining observed.		
				17	9							
				16	10							
				15	11			MW01 terminated at 10.00 m bgl Target depth reached.				
				14	12							
				13	13							
				12	14							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 1/11/18

R.L. SURFACE 3.91

DATUM m

DRILLING CONTRACTOR Matrix Drilling

R.L. CASING 5.00

EQUIPMENT Hand-Auger and Push Tubing

HOLE LOCATION (Easting, Northing) 328290.12, 6257680.09

HOLE SIZE 100 mm

LOGGED BY RM

CHECKED BY SK

NOTES 50 mm groundwater ad gas well installed.

DRILLING							FIELD MATERIAL DESCRIPTION				SAMPLING					
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)				
HA				3	1		TOPSOIL	TOPSOIL: Brown, fine to medium silty sand with trace rootlets. Poorly graded, round to sub-rounded sand.	D	No odour / staining observed.	0	MW03_0.1 - 0.2				
							FILL	FILL: Red mottled brown orange, high plasticity, sandy clay with trace rootlets. Poorly graded, sub-rounded to rounded sand. (Reworked natural material).			0.3	MW03_0.7 - 0.8				
PT				2	2			Grading to orange.			D-M		0.6	MW03_1.9 - 2.0		
								Grading to pale red.								
								Grading to orange.	M-W	Weak organic odour.						
								Grading to black. Trace rootlets. Anthropogenic material including: glass fragments.								
								FILL	FILL: Dark brown, high plasticity, medium to coarse, sandy clay with trace silt and trace angular gravels. Poorly graded, sub-rounded to rounded sand.	W	Sheen, brown, strong sweet odour.	0.7	MW03_2.7 - 2.8			
								FILL	FILL: Dark brown, coarse sandy gravel with trace rootlets. Uniformly graded, angular gravel and poorly graded, sub-rounded to rounded sand. Anthropogenic material including: oily residue, slight sheen (inferred to be molasses).					Weak organic odour.		MW03_2.9 - 3.0
								FILL	FILL: Dark brown, high plasticity, medium to coarse, sandy clay with trace silt and trace angular gravels. Poorly graded, sub-rounded to rounded sand.							
								SW-SC	Clayey SAND: High plasticity, dark brown to black, fine to coarse clayey sand with trace silt and rootlets. Well graded, sub-rounded to rounded sandm and soft clay.					W	Organic reducing odour.	0.3
							SST	SANDSTONE: Brown mottled red, medium to coarse quartz sandstone. Poorly graded, sub-rounded to rounded sandstone.		No odour / staining observed.		MW03_5.5 - 5.6				
								MW03 terminated at 6.40 m bgl Target depth reached.								

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 2/11/18

R.L. SURFACE 14.82

DATUM m

DRILLING CONTRACTOR Matrix Drilling

R.L. CASING 15.72

EQUIPMENT Hand-Auger and Air Hammer

HOLE LOCATION (Easting, Northing) 328202.76, 6257650.92

HOLE SIZE 100 mm

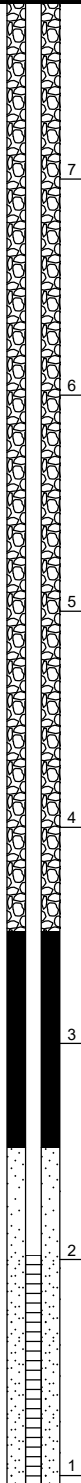
LOGGED BY RM

CHECKED BY SK

NOTES 50 mm groundwater well installed.

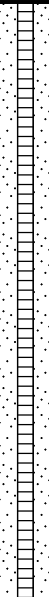
DRILLING							FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
HA							SW-SM	Silty SAND: Brown, medium to coarse silty sand with trace rootlets. Poorly graded, sub-rounded to rounded sand. Grading to orange.			0.1	MW04_0.1 - 0.2
							SST	SANDSTONE: Pale grey to pale red, medium to coarse grained sand. Poorly graded, sub-rounded to rounded sandstone.				
AIR				14	1				D	No odour / staining observed.		
				13	2							
				12	3							
				11	4							
				10	5							
				9	6							
				8	7							
				7	8							
				6	9							
				5	10							

PROJECT NAME Environmental Due Diligence Assessment
PROJECT NUMBER S16913
PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW
DATE STARTED 1/11/18
COMPLETED 2/11/18
R.L. SURFACE 14.82
DATUM m
DRILLING CONTRACTOR Matrix Drilling
R.L. CASING 15.72
EQUIPMENT Hand-Auger and Air Hammer
HOLE LOCATION (Easting, Northing) 328202.76, 6257650.92
HOLE SIZE 100 mm
LOGGED BY RM
CHECKED BY SK
NOTES 50 mm groundwater well installed.

DRILLING						FIELD MATERIAL DESCRIPTION			SAMPLING			
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
AIR							SST	SANDSTONE: Pale grey to pale red, medium to coarse grained sand. Poorly graded, sub-rounded to rounded sandstone. <i>(continued)</i>				
										D	No odour / staining observed.	

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment
PROJECT NUMBER S16913
PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW
DATE STARTED 1/11/18
COMPLETED 2/11/18
R.L. SURFACE 14.82
DATUM m
DRILLING CONTRACTOR Matrix Drilling
R.L. CASING 15.72
EQUIPMENT Hand-Auger and Air Hammer
HOLE LOCATION (Easting, Northing) 328202.76, 6257650.92
HOLE SIZE 100 mm
LOGGED BY RM
CHECKED BY SK
NOTES 50 mm groundwater well installed.

DRILLING						FIELD MATERIAL DESCRIPTION			SAMPLING			
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
AIR				0	15		SST	SANDSTONE: Pale grey to pale red, medium to coarse grained sand. Poorly graded, sub-rounded to rounded sandstone. (continued)	D	No odour / staining observed.		
				-1	16							
				-2	17			MW04 terminated at 16.80 m bgl Target depth reached.				
				-3	18							
				-4	19							
				-5	20							
				-6	21							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 1/11/18

R.L. SURFACE 3.15

DATUM m

DRILLING CONTRACTOR Matrix Drilling

R.L. CASING 4.25

EQUIPMENT Hand-Auger, Push Tubing and Solid Flight Auger

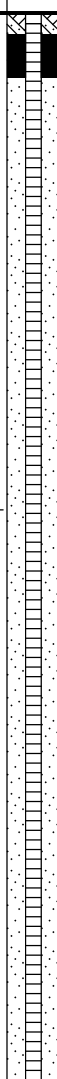
HOLE LOCATION (Easting, Northing) 328260.06, 6257736.85

HOLE SIZE 100 mm

LOGGED BY RM

CHECKED BY SK

NOTES 50 mm groundwater and gas well installed.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING			
Method	Core Recovery (%)	Water	Well Details	RL (m)	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)	
HA				3			TOPSOIL FILL	TOPSOIL: Grass. FILL: Brown mottled red, medium to coarse grained clayey sand and trace sandstone cobbles. Poorly graded, sub-rounded to rounded sand.	D	No odour / staining observed.			
					1			Grading to dark brown to grey.			0.1	MW05_0.9 - 1.0	
PT		2					Trace medium to coarse, lustrous crystals (inferred to be mineral sugar / molasses).	M-D	Sweet odour. Small crystals.				
				2						0.7	MW05_1.9 - 2.0		
		1				CL	Sandy CLAY: High plasticity, pale orange mottled dark brown and pale grey soft to firm, sandy clay with trace rootlets.		Weak organic odour.				
SFA								SST	SANDSTONE: Brown mottled red, medium to coarse sand. Poorly graded, sub-rounded to rounded sandstone.	W	No odour / staining observed.	0.1	MW05_2.5 - 2.6
				3									
		0											
				4									
		-1											
					5						0.1	MW05_4.9 - 5.0	
				-2				MW05 terminated at 5.00 m bgl Target depth reached.					
					6								
				-3									
					7								

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.5		FILL	FILL: Black, fine to coarse grained sandy gravel with trace quartz. Well graded, angular gravels and well graded, rounded sand. Anthropogenic material including: trace glass and brick fragments.	D	No odour / staining observed.	0.2	TP101_0.0 - 0.1
						SST	SANDSTONE: Yellow orange to white, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	M			TP101_0.4 - 0.5
1.0	0.3	TP101_0.8 - 0.9									
				1.5			TP101 terminated at 1.00 m bgl Target depth reached.				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

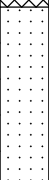
HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.5		FILL	FILL: Black, fine to coarse grained sandy gravel. Well graded, angular to sub-angular gravels and well graded, sub-rounded sand. Anthropogenic material including: minor concrete fragments, asphalt and road base material		No odour / staining observed.		TP102_0.0 - 0.1
	1.0										
	1.5										
	2.0										
						SST	SANDSTONE: Yellow medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.			0.5	TP102_1.0 - 1.1
				2.5			TP102 terminated at 2.00 m bgl Target depth reached.				
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E						FILL	FILL: Brown to brown yellow, fine to coarse grained sand. Well graded, rounded sand.	D-M	No odour / staining observed.		TP103_0.8 - 0.9
						SW-SC	Clayey SAND: Yellow, high plasticity, fine to coarse grained clayey sand. Well graded, rounded sand. Soft clay.			0.5	
				0.5							
				1.0		SST	SANDSTONE: Yellow white to red medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.			0.8	
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							
							TP103 terminated at 1.20 m bgl Target depth reached.				

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E						FILL	FILL: Brown, fine to medium grained silty sand. Poorly graded, rounded sand. Anthropogenic material including: trace glass.	D	No odour / staining observed.		
						SW-SC	Clayey SAND: High plasticity, brown to brown red, fine to coarse grained clayey sand. Well graded, rounded sand and soft clay.	M		0.6	TP104_0.1 - 0.2
				0.5		SST	SANDSTONE: Yellow orange to red orange, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	D-M			
										0.3	TP104_0.6 - 0.7
				1.0			TP104 terminated at 0.70 m bgl Borehole terminated due to equipment refusal.				
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E						FILL	FILL: Brown to dark brown, fine to coarse grained clayey sand. Well graded, rounded sand. Anthropogenic material including: trace glass and trace plastics.	D-M	No odour / staining observed.	0.8	TP105_0.0 - 0.1
				0.5		CL	Sandy CLAY: High palsticity, yellow orange, fine to coarse grained sand, stiff clay. Well graded, rounded sand.	M			TP105_0.4 - 0.5
				1.0		SST	SANDSTONE: Yellow orange to red, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	D-M		1.0	TP105_0.8 - 0.9
				1.5							
							TP105 terminated at 1.50 m bgl Target depth reached.				
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

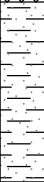
HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING		
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)	
E				0.5		FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with sandstone inclusions. Well graded, rounded sand. Anthropogenic material including: trace scrap metals and plastic pipe.	D-M	No odour / staining observed.	0.3	TP106_0.8 - 0.9	
				1.0		CL	Sandy CLAY: Low plasticity, yellow orange, fine to coarse grained sandy clay, firm. Well graded, rounded sand.	M		0.3		
										M-W		0.6
												0.6
				1.5		SST	SANDSTONE: Yellow orange to red orange medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	D-M				
				2.0			TP106 terminated at 1.50 m bgl Target depth reached.					
				2.5								
				3.0								
				3.5								
				4.0								

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 30/10/18

COMPLETED 30/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING				
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)			
E				0.5		FILL	FILL: Dark brown to brown, fine to coarse grained silty sand with minor fine to medium grained gravel and minor sandstone with trace quartz. Well graded, angular gravels and well graded, rounded sand. Anthropogenic material including: trace potential asbestos containing material and glass fragments.	D	No odour / staining observed.	1.1	TP107_0.0 - 0.1			
				1.0		SST	SANDSTONE: Yellow orange, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	M						
				1.5										
				2.0			TP107 terminated at 1.50 m bgl Target depth reached.							
				2.5										
				3.0										
				3.5										
				4.0										

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E						TOPSOIL	TOPSOIL: Dark brown, fine to medium grained silty sand with trace rootlets. Poorly graded, rounded sand.	D	No odour / staining observed.	0.1	TP110_0.0 - 0.1
						SST	SANDSTONE: Yellow orange to red orange, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.			0	TP110_0.1 - 0.2
							TP110 terminated at 0.20 m bgl. Borehole terminated due to equipment refusal.				
				0.5							
				1.0							
				1.5							
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING		
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)	
E				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone inclusions. Well graded, rounded sand and well graded, angular gravels. Anthropogenic material including: trace concrete, brick fragments and plastic.	D	No odour / staining observed.	0.0	TP111_0.5 - 0.6	
				1.0								
				1.5								
				2.0		FILL	FILL: Black to yellow, fine to coarse grained clayey sand with minor sandstone inclusions. Well graded, rounded sand. Anthropogenic material including: trace metal.	D-M		0	TP111_1.8 - 1.9	
						SST	SANDSTONE: Yellow, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	M		0.2	TP111_2.1 - 2.2	
				2.5			TP111 terminated at 2.30 m bgl Target depth reached.					
				3.0								
				3.5								
				4.0								

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 1/11/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E						TOPSOIL	TOPSOIL: Dark brown, fine to coarse grained silty sand with trace rootlets. Well graded, rounded sand.	D	No odour / staining observed.		
				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone inclusions. Well graded, rounded sand and well graded, angular gravels. Anthropogebnic material including: trace plastic.	D-M		0.3	TP112_0.5 - 0.6
				1.0							
				1.5			Yellow.	M-W		0.9	TP112_1.6 - 1.7
				2.0		FILL	FILL: Black, fine to coarse grained gravelly sand with minor sandstone inclusions. Well graded, rounded sand and well graded, angular gravel. Anthropogenic material including: traces brick and plastic.				
						SST	SANDSTONE: Yellow with white, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone. TP112 terminated at 2.05 m bgl Borehole terminated due to equipment refusal.				TP112_1.9 - 2.0
				2.5							
				3.0							
				3.5							
				4.0							

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.5		TOPSOIL	TOPSOIL: Dark brown, fine to medium grained silty sand with trace rootlets. Poorly graded, rounded sand.	D	No odour / staining observed.	6.8	TP113_0.2 - 0.3
						FILL	FILL: Dark brown to brown, fine to coarse grained gravelly sand with minor sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogenic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
						FILL	FILL: Dark brown to brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogebrnic material including: trace brick and concrete.				
				1.0		SST	SANDSTONE: Yellow orange, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone.	M		0.3	TP113_1.6 - 1.7
				1.5						0.3	
				2.0							
				2.5							
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.0		TOPSOIL	TOPSOIL: Dark brown, fine to medium grained silty sand with trace rootlets. Poorly graded, rounded sand.	D	No odour / staining observed.		TP114_0.7 - 0.8
				0.1		FILL	FILL: Brown to red brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone and shale inclusions. Well graded, rounded sand and well graded, sub-angular to angular gravels. Anthropogenic material including: trace scrap metal, brick and concrete.			0.3	
				0.5							
				1.0							
				1.5		FILL	FILL: Black, fine to coarse grained gravelly sand. Well graded, sub-rounded to rounded sand and fine to medium grained, poorly graded, sub-angular to angular gravels. Anthropogenic material including: metal pipe and trace concrete fragments.	D-M	Landfill odour present. No staining.	1.1	TP114_1.4 - 1.5
				2.0							
				2.5						0.7	TP114_2.4 - 2.5
				3.0							
				3.5			Black to red brown.	M		0.8	TP114_3.5 - 3.6
				3.7							TP114_3.7 - 3.8
4.0											
							TP114 terminated at 4.00 m bgl Target depth reached.				

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION			SAMPLING		
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.0		TOPSOIL	TOPSOIL: Dark brown, fine to medium grained silty sand with trace rootlets. Poorly graded, rounded sand.	D	No odour / staining observed.	0.3	TP115_1.1 - 1.2
				0.5		FILL	FILL: Brown to red brown, fine to coarse grained clayey sand with minor fine to coarse grained gravels and sandstone and shale inclusions. Well graded, rounded sand and well graded, sub-angular to angular gravels. Anthropogenic material including: trace scrap metal, brick and concrete.				
				1.0		FILL	FILL: Black, fine to coarse grained gravelly sand. Well graded, sub-rounded to rounded sand and fine to medium grained, poorly graded, sub-angular to angular gravels. Anthropogenic material including: minor bricks and concrete blocks, metal pipe and trace potential asbestos containing material.	D-M	Landfill odour observed. No staining.	0.2	TP115_2.4 - 2.5
				1.5							
				2.0							
				2.5		FILL	FILL: Black, fine to coarse grained gravelly sand. Well graded, sub-rounded to rounded sand and fine to medium grained, poorly graded, sub-angular to angular gravels. Anthropogenic material including: minor bricks and concrete blocks, metal pipe and trace potential asbestos containing material.	D-M	Landfill odour observed. No staining.	0.2	TP115_2.4 - 2.5
				3.0							
				3.5							
				3.5		SP	SAND: Black, fine to medium grained sand. Poorly graded, rounded sand. (Inferred PASS).	M-W	No odour / staining observed.		TP115_3.0 - 3.1
				3.6							
				3.7							
				3.6		SP	SAND: Black, fine to medium grained sand. Poorly graded, rounded sand. (Inferred PASS).	W	No odour / staining observed.		TP115_3.6 - 3.7
				3.7							
				4.0			TP115 terminated at 4.00 m bgl Target depth reached.				

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

These logs have been prepared for environmental purposes and should not be used for geotechnical design and interpretive purposes

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING		
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)	
E				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone and shale inclusions. Well graded, rounded sand and well graded, angular gravels.	D-M	No odour / staining observed.	0	TP116_0.7 - 0.8	
				1.0								
				1.5	FILL	FILL: Black, fine to coarse grained gravelly sand with minor shale intrusions. Medium grained, poorly graded, sub-angular to angular gravels. Anthropogenic material including: trace glass.	D-M	Landfill odour observed.	0.8			TP116_1.9 - 2.0
				2.0					SP			SAND: Black, fine to medium grained sand. Poorly graded, rounded sand. (Inferred PASS).
				2.5	W							
3.0												
				3.5			TP116 terminated at 3.40 m bgl Target depth reached.					
				4.0								

1. SENVERSA STANDARD S16913_AIRTRUNK_MD.GPJ SENVERSA_GINT.GDT 15/11/18

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 31/10/18

COMPLETED 31/10/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.0		TOPSOIL	TOPSOIL: Dark brown, fine to medium grained silty sand with trace rootlets. Poorly graded, rounded sand.	D	No odour / staining observed.	0.3	TP118_1.0 - 1.1
				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone and shale inclusions. Well graded, rounded sand and well graded, angular gravels.	D-M			
				1.0							
				1.5		FILL	FILL: Dark brown to brown, fine to coarse grained gravelly sand with minor sandstone inclusions. Well graded, sub-rounded to rounded sand and well graded, sub-angular to angular gravels. Anthropogenic material including: trace brick and concrete.	M	Slight landfill odour observed.		
				2.0		GW	Sandy GRAVEL: Dark grey, coarse grained sandy gravel. Uniformly graded, angular gravel and fine to coarse grained, well graded, rounded sand.			W	No odour / staining observed.
				2.5		TP118 terminated at 2.20 m bgl Borehole terminated due water flooding into test-pit.					
				3.0							
				3.5							
				4.0							

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 1/11/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING		
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)	
E				0.0		TOPSOIL	TOPSOIL: Dark brown, fine to coarse grained silty sand with trace rootlets. Well graded, rounded sand.	D-M	No odour / staining observed.			
				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone inclusions. Well graded, rounded sand and well graded, angular gravels. Anthropogenic material including: minor bricks and trace terracota.			0.4		TP119_0.9 - 1.0
				1.0								
				1.5		FILL	FILL: Yellow, fine to coarse grained sand with minor clay and sandstone inclusions. Well graded, rounded sand. Anthropogenic material including: trace terracota and glass.		0.3	TP119_1.2 - 1.3		
				2.0		FILL	FILL: Black, fine to coarse grained gravelly sand. Well graded, rounded sand and well graded, angular gravels. Anthropogenic material including: inferred coke and plastics.		2.2	TP119_1.6 - 1.7		
				2.5					Aged hydrocarbon odour observed.	0.6	TP119_2.4 - 2.5	
				3.0						48.5	TP119_2.8 - 2.9	
				3.5								
				4.0					27.5	TP119_3.7 - 3.8		
						TP119 terminated at 3.80 m bgl Borehole terminated on iferred bedrock.						

PROJECT NAME Environmental Due Diligence Assessment

PROJECT NUMBER S16913

PROJECT LOCATION 1 Sirius Road, Lane Cove West, NSW

DATE STARTED 1/11/18

COMPLETED 1/11/18

R.L. SURFACE _____

DATUM _____

DRILLING CONTRACTOR Pathmore

R.L. CASING _____

EQUIPMENT Excavator

HOLE LOCATION (Easting, Northing) _____

HOLE SIZE 1.5 x 1.0 m

LOGGED BY AC

CHECKED BY SK

NOTES Test-pit backfilled with 'as-dug'.

DRILLING						FIELD MATERIAL DESCRIPTION				SAMPLING	
Method	Core Recovery (%)	Water	Well Details	Depth (m)	Graphic Log	Classification Symbol	Material Description	Moisture	Additional Observations	PID (ppm)	Sample ID & Interval (QA/QC)
E				0.5		FILL	FILL: Brown to brown red, fine to coarse grained sandy clay with minor fine to coarse grained gravels and sandstone inclusions. Well graded, rounded sand and well graded, angular gravels. Anthropogenic material including: trace plastic.	D	No odour / staining observed.	0.2	TP120_0.2 - 0.3
				1.0		Yellow to yellow brown.	D-M				
				1.5		FILL	FILL: Black, fine to coarse grained gravelly sand with minor sandstone inclusions. Well graded, rounded sand and well graded, angular gravel. Anthropogenic material including: traces bricks and plastics.	M-W		0.5	TP120_1.8 - 1.9
				2.0							
				3.0		SST	SANDSTONE: Yellow with white, medium to coarse sandstone. Poorly graded, sub-rounded to rounded sandstone. TP120 terminated at 2.95 m bgl Borehole terminated due to equipment refusal.	D-M			
				3.5							
				4.0							



Appendix C: Laboratory Certificates

Chain of Custody Documentation

625312

Laboratory: Ewofins MAT
Address: Mars Road, Lane Cove
Contact: Nibha Vaidya
Phone:

Job Number: <u>516913</u>	Purchase Order:
Project Name: <u>Phase 2 Due Diligence</u>	Quote No: <u>ALC-MEDQ10414</u>
Sampled By: <u>Alicia Crumb</u>	Turn Around Time: <u>Standard</u>
Project Manager: <u>Roxanne McKinnon</u>	Page: <u>1</u> of <u>2</u>
Email Report To: <u>alicia.crumb@senversa.com.au</u>	Phone/Mobile: <u>0432 878 912</u>

[illegible]

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name:

Signature: _____

Date: 30/10/18

Relinquished By:		Method of Shipment (if applicable):		Received by:	
Name/Signature: <i>Alicia Crumley</i>	Date: <i>3/4/18</i>	Carrier / Reference #:		Name/Signature: <i>Lella D.</i>	Date: <i>3/4/18</i>
Of: <i>SENERVA</i>	Time: <i>4pm</i>	Date/Time:		Of: <i>ELNOTUS</i>	Time: <i>4:35 PM</i>
Name/Signature:	Date:	Carrier / Reference #:		Name/Signature:	Date:
Of:	Time:	Date/Time:		Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:		Name/Signature:	Date:
Of:	Time:	Date/Time:		Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Completed by: _____
Checked by: _____

Chain of Custody Documentation

625342

Laboratory: Eurofins MCLT
Address: Main Road, Lane Cove
Contact: Nisha Vaidya
Phone:

Job Number: S16913
Project Name: Phase 2 Due Diligence
Sampled By: Alicia Crawly
Project Manager: Roxanne McKinnon
Email Report To: See pg 1

Purchase Order:
Quote No: ~~AUS-MED-00144~~
Turn Around Time: Standard
Page: 2 of 2
Phone/Mobile: 0432 878 912

Sample Information					Container Information		Analysis Required										Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	ON HOLD	TRH	BTEX	OC/PCP	PAH	Heavy metals (8)	Asbestos (presence/absence)	PCBS			
	TP108-0.4-0.5	Soil	30/10/18	Pm	Glass Jar	1	X										Analysis to be scheduled in next 48 hrs (for samples on HOLD) Please keep cool
	TP109-0.1-0.2																
	TP109-0.4-0.5																
	TP101-SS			AM	Bag	1											
	TP102-SS																
	TP105-SS																
	TP107-0.6-0.7			PM													
	TP107-SS																
	TP108-SS																
	SS05-F	Fragment															
	SS06-F																
	SP172-F			Am													
	SP-X																
	QC102-0.8-0.9	Soil			Glass Jar												
	QC201-0.8-0.9																
	QC102-0.0-0.1																FORWARD TO A-S-Smithfield
	QC202-0.0-0.1				Bag												
	QC301-30102018	Soil		Pm	Vial	1			X								
	QC401-30102018	Soil			Vial	1			X								
	QC501-30102018	Water			Vial/Bottle	3			X			X					

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name:

Alicia Crawly

Signature:



Date:

30-10-18

Relinquished By: A. Crawly
Name/Signature: Alicia Crawly
Of: SENVERSA

Date: 30/10/18
Time: 4pm

Method of Shipment (if applicable):
Carrier / Reference #:
Date/Time:

Received by:
Name/Signature: LUCIA D
Of: EUROFINS MCLT
Date: 30/10/18
Time: 4:35 PM

Name/Signature:
Of:
Date:
Time:

Name/Signature:
Of:
Date:
Time:

Name/Signature:
Of:
Date:
Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L = Lugol's iodine preserved white plastic bottle; SW = sulfuric acid preserved wide mouth glass jar

Completed by:

Checked by:

Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Roxanne McKinnon**
Project name: **PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Oct 30, 2018 4:35 PM**
Eurofins | mgt reference: **625312**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

Sample QC201_0.8-0.9 forwarded to ALS.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Roxanne McKinnon - roxanne.mckinnon@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625312
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 30, 2018 4:35 PM
Due: Nov 6, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	SS01_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38512		X			
2	SS02_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38513		X			
3	SS03_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38514		X			
4	SS04_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38515		X			
5	SS05_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38516		X			
6	SS06_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38517		X			
7	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38518		X			
8	TP101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38519		X			
9	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-Oc38520		X			

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
10	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-Oc38521		X			
11	TP103_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38522		X			
12	TP104_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38523		X			
13	TP104_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38524		X			
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38525	X				
15	TP105_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38526		X			
16	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38527		X			
17	TP106_1.3-1.4	Oct 30, 2018		Soil	S18-Oc38528		X			
18	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-Oc38529	X				
19	TP107_1.1-1.2	Oct 30, 2018		Soil	S18-Oc38530		X			
20	TP108_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38531		X			
21	TP108_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38532		X			

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Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
22	TP109_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38533		X			
23	TP109_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38534		X			
24	TP101_SS	Oct 30, 2018		Soil	S18-Oc38535		X			
25	TP102_SS	Oct 30, 2018		Soil	S18-Oc38536		X			
26	TP105_SS	Oct 30, 2018		Soil	S18-Oc38537		X			
27	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38538		X			
28	TP107_SS	Oct 30, 2018		Soil	S18-Oc38539		X			
29	TP108_SS	Oct 30, 2018		Soil	S18-Oc38540		X			
30	SS05_F	Oct 30, 2018		Building Materials	S18-Oc38541		X			
31	SS06_F	Oct 30, 2018		Building Materials	S18-Oc38542		X			
32	SP172_F	Oct 30, 2018		Building	S18-Oc38543		X			

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Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
				Materials						
33	SP_X	Oct 30, 2018		Building Materials	S18-Oc38544		X			
34	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38545		X			
35	QC102_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38546		X			
36	QC202_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38547		X			
37	QC301_30102 018 (TB)	Oct 30, 2018		Soil	S18-Oc38548					X
38	QC401_30102 018 (TS)	Oct 30, 2018		Soil	S18-Oc38549					X
39	QC401_30102	Oct 30, 2018		Soil	S18-Oc38550					X

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Priority: 5 Day
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Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
	018 (TS LAB)									
40	QC501_30102 018	Oct 30, 2018		Water	S18-Oc38551			X	X	
Test Counts						36	36	1	4	4

Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 625312-S
Project name PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Oct 30, 2018

Client Sample ID			QC301 301020 18 (TB)	R20QC401 3010 2018 (TS)
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-Oc38548	S18-Oc38549
Date Sampled			Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit		
BTEX				
Benzene	0.1	mg/kg	< 0.1	110
Toluene	0.1	mg/kg	< 0.1	110
Ethylbenzene	0.1	mg/kg	< 0.1	110
m&p-Xylenes	0.2	mg/kg	< 0.2	110
o-Xylene	0.1	mg/kg	< 0.1	110
Xylenes - Total	0.3	mg/kg	< 0.3	110
4-Bromofluorobenzene (surr.)	1	%	70	82

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description

BTEX

Testing Site

Sydney

Extracted

Nov 02, 2018

Holding Time

14 Day

- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices

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Order No.:
Report #: 625312
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 30, 2018 4:35 PM
Due: Nov 6, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	SS01_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38512		X			
2	SS02_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38513		X			
3	SS03_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38514		X			
4	SS04_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38515		X			
5	SS05_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38516		X			
6	SS06_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38517		X			
7	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38518		X			
8	TP101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38519		X			
9	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-Oc38520		X			

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
10	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-Oc38521		X			
11	TP103_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38522		X			
12	TP104_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38523		X			
13	TP104_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38524		X			
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38525	X				
15	TP105_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38526		X			
16	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38527		X			
17	TP106_1.3-1.4	Oct 30, 2018		Soil	S18-Oc38528		X			
18	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-Oc38529	X				
19	TP107_1.1-1.2	Oct 30, 2018		Soil	S18-Oc38530		X			
20	TP108_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38531		X			
21	TP108_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38532		X			

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
22	TP109_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38533		X			
23	TP109_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38534		X			
24	TP101_SS	Oct 30, 2018		Soil	S18-Oc38535		X			
25	TP102_SS	Oct 30, 2018		Soil	S18-Oc38536		X			
26	TP105_SS	Oct 30, 2018		Soil	S18-Oc38537		X			
27	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38538		X			
28	TP107_SS	Oct 30, 2018		Soil	S18-Oc38539		X			
29	TP108_SS	Oct 30, 2018		Soil	S18-Oc38540		X			
30	SS05_F	Oct 30, 2018		Building Materials	S18-Oc38541		X			
31	SS06_F	Oct 30, 2018		Building Materials	S18-Oc38542		X			
32	SP172_F	Oct 30, 2018		Building	S18-Oc38543		X			

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Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
				Materials						
33	SP_X	Oct 30, 2018		Building Materials	S18-Oc38544		X			
34	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38545		X			
35	QC102_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38546		X			
36	QC202_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38547		X			
37	QC301_30102 018 (TB)	Oct 30, 2018		Soil	S18-Oc38548					X
38	QC401_30102 018 (TS)	Oct 30, 2018		Soil	S18-Oc38549					X
39	QC501_30102	Oct 30, 2018		Water	S18-Oc38551			X	X	

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Sample Detail					
	HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	
Sydney Laboratory - NATA Site # 18217		X			X
Brisbane Laboratory - NATA Site # 20794	X				
Perth Laboratory - NATA Site # 23736					
018					
Test Counts	36	36	1	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
BTEX									
Benzene			mg/kg	< 0.1			0.1	Pass	
Toluene			mg/kg	< 0.1			0.1	Pass	
Ethylbenzene			mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes			mg/kg	< 0.2			0.2	Pass	
o-Xylene			mg/kg	< 0.1			0.1	Pass	
Xylenes - Total			mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	82			70-130	Pass	
Toluene			%	78			70-130	Pass	
Ethylbenzene			%	89			70-130	Pass	
m&p-Xylenes			%	88			70-130	Pass	
o-Xylene			%	87			70-130	Pass	
Xylenes - Total			%	88			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-No03527	NCP	%	83			70-130	Pass	
Toluene	S18-No03527	NCP	%	80			70-130	Pass	
Ethylbenzene	S18-No03527	NCP	%	82			70-130	Pass	
m&p-Xylenes	S18-No03527	NCP	%	82			70-130	Pass	
o-Xylene	S18-No03527	NCP	%	78			70-130	Pass	
Xylenes - Total	S18-No03527	NCP	%	81			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-No03526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-No03526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-No03526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-No03526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-No03526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-No03526	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya Analytical Services Manager



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 625312-W
Project name PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Oct 30, 2018

Client Sample ID			QC501_301020 18
Sample Matrix			Water
Eurofins mgt Sample No.			S18-Oc38551
Date Sampled			Oct 30, 2018
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	120
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX	Melbourne	Nov 01, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Metals M8	Melbourne	Nov 01, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625312
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 30, 2018 4:35 PM
Due: Nov 6, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
External Laboratory										
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID					
1	SS01_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38512		X			
2	SS02_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38513		X			
3	SS03_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38514		X			
4	SS04_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38515		X			
5	SS05_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38516		X			
6	SS06_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38517		X			
7	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38518		X			
8	TP101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38519		X			
9	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-Oc38520		X			

Company Name: Senversa Pty Ltd NSW
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Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
10	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-Oc38521		X			
11	TP103_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38522		X			
12	TP104_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38523		X			
13	TP104_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38524		X			
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38525	X				
15	TP105_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38526		X			
16	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38527		X			
17	TP106_1.3-1.4	Oct 30, 2018		Soil	S18-Oc38528		X			
18	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-Oc38529	X				
19	TP107_1.1-1.2	Oct 30, 2018		Soil	S18-Oc38530		X			
20	TP108_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38531		X			
21	TP108_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38532		X			

Company Name: Senversa Pty Ltd NSW
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Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
22	TP109_0.1-0.2	Oct 30, 2018		Soil	S18-Oc38533		X			
23	TP109_0.4-0.5	Oct 30, 2018		Soil	S18-Oc38534		X			
24	TP101_SS	Oct 30, 2018		Soil	S18-Oc38535		X			
25	TP102_SS	Oct 30, 2018		Soil	S18-Oc38536		X			
26	TP105_SS	Oct 30, 2018		Soil	S18-Oc38537		X			
27	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-Oc38538		X			
28	TP107_SS	Oct 30, 2018		Soil	S18-Oc38539		X			
29	TP108_SS	Oct 30, 2018		Soil	S18-Oc38540		X			
30	SS05_F	Oct 30, 2018		Building Materials	S18-Oc38541		X			
31	SS06_F	Oct 30, 2018		Building Materials	S18-Oc38542		X			
32	SP172_F	Oct 30, 2018		Building	S18-Oc38543		X			

Company Name: Senversa Pty Ltd NSW
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Sample Detail						HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271								X	X	
Sydney Laboratory - NATA Site # 18217							X			X
Brisbane Laboratory - NATA Site # 20794						X				
Perth Laboratory - NATA Site # 23736										
				Materials						
33	SP_X	Oct 30, 2018		Building Materials	S18-Oc38544		X			
34	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-Oc38545		X			
35	QC102_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38546		X			
36	QC202_0.0-0.1	Oct 30, 2018		Soil	S18-Oc38547		X			
37	QC301_30102 018 (TB)	Oct 30, 2018		Soil	S18-Oc38548					X
38	QC401_30102 018 (TS)	Oct 30, 2018		Soil	S18-Oc38549					X
39	QC501_30102	Oct 30, 2018		Water	S18-Oc38551			X	X	

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Sample Detail					
	HOLD	HOLD	Metals M8	BTEX	BTEX
Melbourne Laboratory - NATA Site # 1254 & 14271			X	X	
Sydney Laboratory - NATA Site # 18217		X			X
Brisbane Laboratory - NATA Site # 20794	X				
Perth Laboratory - NATA Site # 23736					
018					
Test Counts	36	36	1	3	3

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram	mg/L: milligrams per litre	ug/L: micrograms per litre
ppm: Parts per million	ppb: Parts per billion	%: Percentage
org/100mL: Organisms per 100 millilitres	NTU: Nephelometric Turbidity Units	MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Method Blank								
BTEX								
Benzene			mg/L	< 0.001		0.001	Pass	
Toluene			mg/L	< 0.001		0.001	Pass	
Ethylbenzene			mg/L	< 0.001		0.001	Pass	
m&p-Xylenes			mg/L	< 0.002		0.002	Pass	
o-Xylene			mg/L	< 0.001		0.001	Pass	
Xylenes - Total			mg/L	< 0.003		0.003	Pass	
Method Blank								
Heavy Metals								
Arsenic			mg/L	< 0.001		0.001	Pass	
Cadmium			mg/L	< 0.0002		0.0002	Pass	
Chromium			mg/L	< 0.001		0.001	Pass	
Copper			mg/L	< 0.001		0.001	Pass	
Lead			mg/L	< 0.001		0.001	Pass	
Mercury			mg/L	< 0.0001		0.0001	Pass	
Nickel			mg/L	< 0.001		0.001	Pass	
Zinc			mg/L	< 0.005		0.005	Pass	
LCS - % Recovery								
BTEX								
Benzene			%	100		70-130	Pass	
Toluene			%	101		70-130	Pass	
Ethylbenzene			%	107		70-130	Pass	
m&p-Xylenes			%	106		70-130	Pass	
Xylenes - Total			%	107		70-130	Pass	
LCS - % Recovery								
Heavy Metals								
Arsenic			%	98		80-120	Pass	
Cadmium			%	97		80-120	Pass	
Chromium			%	96		80-120	Pass	
Copper			%	99		80-120	Pass	
Lead			%	96		80-120	Pass	
Mercury			%	98		75-125	Pass	
Nickel			%	97		80-120	Pass	
Zinc			%	98		80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery								
Heavy Metals				Result 1				
Arsenic	M18-Oc37667	NCP	%	98		75-125	Pass	
Cadmium	M18-Oc37667	NCP	%	98		75-125	Pass	
Chromium	M18-Oc37667	NCP	%	97		75-125	Pass	
Copper	M18-Oc37667	NCP	%	98		75-125	Pass	
Lead	M18-Oc37667	NCP	%	95		75-125	Pass	
Mercury	M18-Oc37667	NCP	%	93		70-130	Pass	
Nickel	M18-Oc37667	NCP	%	99		75-125	Pass	
Zinc	M18-Oc37667	NCP	%	101		75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M18-Oc37667	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M18-Oc37667	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M18-Oc37667	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Laboratory: EUROFIN S MGT
Address: MARS ROAD, LANG COVE
Contact:
Phone: NIDHA VAIDYA

Senversa Pty Ltd www.senversa.com.au ABN 89 132 231 380 lan.batterley@senversa.com.au roxanne.mckinnon@senversa.com.au					Laboratory: CUREFINS MGT Address: MARS ROAD, LANE COVE Contact: NIGHA VAIDYA Phone:					Analysis Required Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc. 12.56°C 62350											
Job Number: 516913 Project Name: Phase 2 Due Diligence Sampled By: Alicia Camb Project Manager: Roxanne Mckinnon Email Report To: alicia.camb@senversa.com.au					Purchase Order: Quote No: ALS-MEQ010412 Turn Around Time: Standard Page: 1 of 2 Phone/Mobile: 0432 878 912					ON HOLD TRH BTEX PAH Heavy metals PFAS PCBs OCC/OCF Asbestos / Presence-absence SPOCAS - ASS											
Sample Information					Container Information																
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles															
	TP113-0.2-0.3	Soil	31-10-18	Am	Glass Jar	1	X														
	TP113-1.0-1.1				Glass Jar + Asb. Bag	2															
	TP113-1.1-1.2				PFAS Jar	1															
	TP113-1.6-1.7				Glass Jar + ASS bag	2															
	TP114-1.4-1.5				Glass + PFAS Jar	2											X				ASS to be analysed. Rest on hold
	TP114-0.7-0.8				Glass Jar	1															
	TP114-2.4-2.5				Glass Jar	1															
	TP114-3.5-3.6				Glass + PFAS Jar	2															
	TP114-3.7-3.8				Glass Jar + ASS Bag	2											X				
	QC203-0.2-0.3				Glass Jar	1															
	QC204-1.1-1.2				PFAS Jar	1															
	QC203-0.2-0.3				Glass Jar	1															
	QC204-1.1-1.2				PFAS Jar	1															FORWARD TO ALS-SMITHFIELD
	TP115-1.1-1.2				Glass Jar + Asb. Bag	2															FORWARD TO ALS-SMITHFIELD
	TP115-2.4-2.5				Glass + PFAS Jar	2															
	TP115-3.6-3.7				Glass Jar + ASS Bag	2															
	TP115-3.0-3.1			PM Am	Asb. Bag	1											X				
	TP115-3.2-3.1F	Fragment		Am	Asb. Bag	1															
	TP111-0.5-0.6	Soil		PM	Glass Jar + Asb bag	2															
	TP111-1.1-1.2				Glass Jar	1															

Sampler: I attest that proper field sampling procedures in accordance with Senversa's Standard Operating Procedures (SOPs) have been followed.

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name:

Signature: _____

Date: 31-10-18

Relinquished By:		Method of Shipment (if applicable):		Received by:	
Name/Signature: Alicia Combs	Date: 31-10-18	Carrier / Reference #:	Name/Signature: ElviseD	Date: 311018	
Of: GENVERSA	Time: 4:20pm	Date/Time:	Of: Eurofins	Time: 4:29PM	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; OBC = Nitric Preserved OBC; CM = ...

Time:	Date/Time:	Of:	Time:
Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO ₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; UA = Unpreserved Amber Glass			

Completed by: _____

Checked by: _____

12.56^a C
625350

Laboratory: **EUROTINS MGT**
Address: **MARS ROAD LANE CAFE**
Contact:
Phone: **NIBHA VADYA**

Job Number: S16913	Purchase Order:
Project Name: Phase 2 The Briggance	Quote No: ~~ASP MCKINNON~~
Sampled By: A. Crony	Turn Around Time: Standard
Project Manager: R. McKinnon	Page: 2 of 2
Email Report To: See pg 1.	Phone/Mobile: 0432 87 8912

[illegible][illegible]

Sampler Name: Alicia Cronin

Signature: 

Date: 31-10-18

Relinquished By:		Method of Shipment (if applicable):		Received by:	
Name/Signature: Alicia Gray	Date: 31-10-18	Carrier / Reference #:		Name/Signature: Elvis D	Date: 31/10/18
Of: SENVERSA	Time: 4:30pm	Date/Time:		Of: Eurofins	Time: 4:29PM
Name/Signature:	Date:	Carrier / Reference #:		Name/Signature:	Date:
Of:	Time:	Date/Time:		Of:	Time:
Name/Signature:	Date:	Carrier / Reference #:		Name/Signature:	Date:
Of:	Time:	Date/Time:		Of:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; OPG = Nitric Peroxide (OPG); ...

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottle; ST = Sterile Bottle; UA = Unpreserved Amber Glass

Completed by: _____
Checked by: _____

Enviro Sample NSW

From: Alicia Cronly <Alicia.Cronly@senversa.com.au>
Sent: Thursday, 1 November 2018 6:02 AM
To: Enviro Sample NSW
Subject: Re: Phase 2 Due Diligence- S16913

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Elvis,

Yes I did mention possible ASSpH for one of the samples yesterday - but for now just SPOCAS on all, with no ASSpH analysis.

Thanks!

Get [Outlook for iOS](#)

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Wednesday, October 31, 2018 7:12:52 PM
To: Alicia Cronly
Subject: Phase 2 Due Diligence- S16913

Hi Alicia,

I am just in the process of logging the samples that you dropped off earlier today.
I just wanted to confirm if you will be needing both ASSpH and SPOCAS analysis for TP113_1.6-1.7 and just SPOCAS on the rest where applicable?
Attached to this email is a copy of your COC.
Please do not hesitate to contact us if there is anything else we can do to assist you.

Kind Regards,
Elvis Dsouza.
Enviro Sample NSW

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone : +61 2 9900 8492

Email : EnviroSampleNSW@Eurofins.com
Website: www.eurofins.com.au/environmental-testing

Message protected by MailGuard: e-mail anti-virus, anti-spam and content filtering.
<http://www.mailguard.com.au/mg>

[Report this message as spam](#)

Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Alicia Cronly**
Project name: **PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Oct 31, 2018 4:29 PM**
Eurofins | mgt reference: **625350**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Alicia Cronly - Alicia.Cronly@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625350
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 31, 2018 4:29 PM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	TP113_1.6-1.7	Oct 31, 2018		Soil	S18-Oc38759					X	X
2	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-Oc38760					X	X
3	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-Oc38761					X	X
4	TP116_3.3-3.4	Oct 31, 2018		Soil	S18-Oc38762					X	X
5	TP117_1.8-1.9	Oct 31, 2018		Soil	S18-Oc38763					X	X
6	QC302_31102 018 (TB)	Oct 31, 2018		Soil	S18-Oc38764				X		
7	QC402_31102 018 (TS)	Oct 31, 2018		Soil	S18-Oc38765				X		
8	QC502_31102	Oct 31, 2018		Water	S18-Oc38766		X	X			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
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Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
018											
9	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39166	X					
10	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-Oc39167	X					
11	TP113_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39168	X					
12	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-Oc39170	X					
13	TP114_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39171	X					
14	TP114_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39172	X					
15	TP114_3.5-3.6	Oct 31, 2018		Soil	S18-Oc39173	X					
16	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39175	X					
17	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39176	X					
18	TP115_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39177	X					

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625350
Phone: 02 9994 8016
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Received: Oct 31, 2018 4:29 PM
Due: Nov 7, 2018
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Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
19	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39178	X					
20	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-Oc39180	X					
21	TP115_3.0-3.1_F	Oct 31, 2018		Building Materials	S18-Oc39181	x					
22	TP111_0.5-0.6	Oct 31, 2018		Soil	S18-Oc39182	X					
23	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39183	X					
24	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39184	X					
25	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-Oc39185	X					
26	TP110_0.0-0.05	Oct 31, 2018		Soil	S18-Oc39186	x					
27	TP110_0.1-0.15	Oct 31, 2018		Soil	S18-Oc39187	x					
28	TP116_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39188	X					

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

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Report #: 625350
Phone: 02 9994 8016
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Received: Oct 31, 2018 4:29 PM
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Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
29	TP116 1.9-2.0	Oct 31, 2018		Soil	S18-Oc39189	X					
30	TP117 0.4-0.5	Oct 31, 2018		Soil	S18-Oc39191	X					
31	TP118 1.0-1.1	Oct 31, 2018		Soil	S18-Oc39193	X					
32	TP118 1.8-1.9	Oct 31, 2018		Soil	S18-Oc39194	X					
33	TP118 2.0-2.1	Oct 31, 2018		Soil	S18-Oc39195	X					
34	TP111 1.1-1.2	Oct 31, 2018		Soil	S18-Oc39253	X					
Test Counts						26	1	3	3	5	5

Certificate of Analysis

Senversa Pty Ltd NSW
 Level 5, The Grafton Bond Building, 201 Kent Street
 SYDNEY
 NSW 2000



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Alicia Cronly

Report 625350-S
 Project name PHASE 2 DUE DILIGENCE
 Project ID S16913
 Received Date Oct 31, 2018

Client Sample ID			TP113_1.6-1.7	TP114_3.7-3.8	TP115_3.6-3.7	TP116_3.3-3.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Oc38759	S18-Oc38760	S18-Oc38761	S18-Oc38762
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
SPOCAS Suite						
pH-KCL	0.1	pH Units	8.3	6.0	5.5	5.6
pH-OX	0.1	pH Units	6.9	3.2	2.7	3.0
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	5.0	7.0	7.0
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	< 2	140	230	140
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	140	220	140
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	< 0.02	< 0.02	< 0.02
sulfidic - TPA equiv. S% pyrite	0.02	% pyrite S	< 0.02	0.23	0.36	0.23
sulfidic - TSA equiv. S% pyrite	0.02	% pyrite S	< 0.02	0.22	0.35	0.22
Sulfur - KCl Extractable	0.02	% S	< 0.02	0.60	0.03	0.06
Sulfur - Peroxide	0.02	% S	< 0.02	0.92	0.35	0.28
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	< 0.02	0.32	0.31	0.22
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	< 10	200	200	140
HCl Extractable Sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur	0.02	% S	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	n/a	n/a	n/a
Net Acid soluble sulfur - equivalent S% pyrite ^{S02}	0.02	% S	n/a	n/a	n/a	n/a
Calcium - KCl Extractable	0.02	% Ca	0.14	0.88	0.11	0.16
Calcium - Peroxide	0.02	% Ca	0.17	1.0	0.12	0.18
Acid Reacted Calcium	0.02	% Ca	0.04	0.15	< 0.02	0.03
acidity - Acid Reacted Calcium	10	mol H+/t	18	73	< 10	14
sulfidic - Acid Reacted Ca equiv. S% pyrite	0.02	% S	0.03	0.12	< 0.02	0.02
Magnesium - KCl Extractable	0.02	% Mg	< 0.02	< 0.02	< 0.02	< 0.02
Magnesium - Peroxide	0.02	% Mg	< 0.02	< 0.02	< 0.02	< 0.02
Acid Reacted Magnesium	0.02	% Mg	< 0.02	< 0.02	< 0.02	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	< 10	< 10	< 10
sulfidic - Acid Reacted Mg equiv. S% pyrite	0.02	% S	< 0.02	< 0.02	< 0.02	< 0.02
Acid Neutralising Capacity (ANCE)	0.02	%CaCO3	0.26	n/a	n/a	n/a
Acid Neutralising Capacity - Acidity units (a-ANCE)	10	mol H+/t	52	n/a	n/a	n/a
Acid Neutralising Capacity - equivalent S% pyrite(s-ANCE)	0.02	% S	0.08	n/a	n/a	n/a
ANC Fineness Factor		factor	1.5	1.5	1.5	1.5
SPOCAS - Net Acidity (Sulfur Units)	0.02	% S	< 0.02	0.33	0.32	0.23
SPOCAS - Net Acidity (Acidity Units)	10	mol H+/t	< 10	200	200	140
SPOCAS - Liming rate	1	kg CaCO3/t	< 1	15	15	11

Client Sample ID			TP113_1.6-1.7	TP114_3.7-3.8	TP115_3.6-3.7	TP116_3.3-3.4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-Oc38759	S18-Oc38760	S18-Oc38761	S18-Oc38762
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Extraneous Material						
<2mm Fraction	0.005	g	86	76	120	73
>2mm Fraction	0.005	g	15	0.68	0.080	0.94
Analysed Material	0.1	%	86	99	100	99
Extraneous Material	0.1	%	14	0.9	< 0.1	1.3
% Moisture	1	%	9.9	21	22	22

Client Sample ID			TP117_1.8-1.9	QC302_311020	R20QC402_3110
Sample Matrix			Soil	18 (TB)	2018 (TS)
Eurofins mgt Sample No.			S18-Oc38763	S18-Oc38764	S18-Oc38765
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit			
BTEX					
Benzene	0.1	mg/kg	-	< 0.1	86
Toluene	0.1	mg/kg	-	< 0.1	87
Ethylbenzene	0.1	mg/kg	-	< 0.1	80
m&p-Xylenes	0.2	mg/kg	-	< 0.2	80
o-Xylene	0.1	mg/kg	-	< 0.1	80
Xylenes - Total	0.3	mg/kg	-	< 0.3	80
4-Bromofluorobenzene (surr.)	1	%	-	79	82
SPOCAS Suite					
pH-KCL	0.1	pH Units	6.3	-	-
pH-OX	0.1	pH Units	6.7	-	-
Acid trail - Titratable Actual Acidity	2	mol H+/t	< 2	-	-
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	< 2	-	-
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	< 2	-	-
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	< 0.02	-	-
sulfidic - TPA equiv. S% pyrite	0.02	% pyrite S	< 0.02	-	-
sulfidic - TSA equiv. S% pyrite	0.02	% pyrite S	< 0.02	-	-
Sulfur - KCl Extractable	0.02	% S	0.02	-	-
Sulfur - Peroxide	0.02	% S	0.07	-	-
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	0.04	-	-
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	28	-	-
HCl Extractable Sulfur	0.02	% S	n/a	-	-
Net Acid soluble sulfur	0.02	% S	n/a	-	-
Net Acid soluble sulfur - acidity units	10	mol H+/t	n/a	-	-
Net Acid soluble sulfur - equivalent S% pyrite ^{S02}	0.02	% S	n/a	-	-
Calcium - KCl Extractable	0.02	% Ca	0.09	-	-
Calcium - Peroxide	0.02	% Ca	0.13	-	-
Acid Reacted Calcium	0.02	% Ca	0.04	-	-
acidity - Acid Reacted Calcium	10	mol H+/t	22	-	-
sulfidic - Acid Reacted Ca equiv. S% pyrite	0.02	% S	0.03	-	-
Magnesium - KCl Extractable	0.02	% Mg	< 0.02	-	-
Magnesium - Peroxide	0.02	% Mg	< 0.02	-	-
Acid Reacted Magnesium	0.02	% Mg	< 0.02	-	-
acidity - Acid Reacted Magnesium	10	mol H+/t	< 10	-	-
sulfidic - Acid Reacted Mg equiv. S% pyrite	0.02	% S	< 0.02	-	-

Client Sample ID			TP117_1.8-1.9	QC302_311020	R20 QC402_3110
Sample Matrix			Soil	18 (TB)	2018 (TS)
Eurofins mgt Sample No.			S18-Oc38763	S18-Oc38764	S18-Oc38765
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit			
SPOCAS Suite					
Acid Neutralising Capacity (ANCE)	0.02	%CaCO ₃	0.27	-	-
Acid Neutralising Capacity - Acidity units (a-ANCE)	10	mol H ⁺ /t	53	-	-
Acid Neutralising Capacity - equivalent S% pyrite(s-ANCE)	0.02	% S	0.09	-	-
ANC Fineness Factor		factor	1.5	-	-
SPOCAS - Net Acidity (Sulfur Units)	0.02	% S	0.04	-	-
SPOCAS - Net Acidity (Acidity Units)	10	mol H ⁺ /t	28	-	-
SPOCAS - Liming rate	1	kg CaCO ₃ /t	2.0	-	-
Extraneous Material					
<2mm Fraction	0.005	g	50	-	-
>2mm Fraction	0.005	g	46	-	-
Analysed Material	0.1	%	52	-	-
Extraneous Material	0.1	%	48	-	-
% Moisture	1	%	28	-	-

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX	Sydney	Nov 06, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Nov 02, 2018	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Nov 02, 2018	6 Week
- Method: LTM-GEN-7050/7070			
% Moisture	Brisbane	Oct 31, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625350
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 31, 2018 4:29 PM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	TP113_1.6-1.7	Oct 31, 2018		Soil	S18-Oc38759					X	X
2	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-Oc38760					X	X
3	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-Oc38761					X	X
4	TP116_3.3-3.4	Oct 31, 2018		Soil	S18-Oc38762					X	X
5	TP117_1.8-1.9	Oct 31, 2018		Soil	S18-Oc38763					X	X
6	QC302_31102 018 (TB)	Oct 31, 2018		Soil	S18-Oc38764				X		
7	QC402_31102 018 (TS)	Oct 31, 2018		Soil	S18-Oc38765				X		
8	QC502_31102	Oct 31, 2018		Water	S18-Oc38766		X	X			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625350
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 31, 2018 4:29 PM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
018											
9	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39166	X					
10	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-Oc39167	X					
11	TP113_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39168	X					
12	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-Oc39170	X					
13	TP114_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39171	X					
14	TP114_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39172	X					
15	TP114_3.5-3.6	Oct 31, 2018		Soil	S18-Oc39173	X					
16	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39175	X					
17	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39176	X					
18	TP115_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39177	X					

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Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
19	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39178	X					
20	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-Oc39180	X					
21	TP115_3.0-3.1_F	Oct 31, 2018		Building Materials	S18-Oc39181	x					
22	TP111_0.5-0.6	Oct 31, 2018		Soil	S18-Oc39182	X					
23	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39183	X					
24	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39184	X					
25	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-Oc39185	X					
26	TP110_0.0-0.05	Oct 31, 2018		Soil	S18-Oc39186	x					
27	TP110_0.1-0.15	Oct 31, 2018		Soil	S18-Oc39187	x					
28	TP116_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39188	X					

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Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
29	TP116 1.9-2.0	Oct 31, 2018		Soil	S18-Oc39189	X					
30	TP117 0.4-0.5	Oct 31, 2018		Soil	S18-Oc39191	X					
31	TP118 1.0-1.1	Oct 31, 2018		Soil	S18-Oc39193	X					
32	TP118 1.8-1.9	Oct 31, 2018		Soil	S18-Oc39194	X					
33	TP118 2.0-2.1	Oct 31, 2018		Soil	S18-Oc39195	X					
34	TP111 1.1-1.2	Oct 31, 2018		Soil	S18-Oc39253	X					
Test Counts						26	1	3	3	5	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
BTEX									
Benzene			mg/kg	< 0.1			0.1	Pass	
Toluene			mg/kg	< 0.1			0.1	Pass	
Ethylbenzene			mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes			mg/kg	< 0.2			0.2	Pass	
o-Xylene			mg/kg	< 0.1			0.1	Pass	
Xylenes - Total			mg/kg	< 0.3			0.3	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	92			70-130	Pass	
Toluene			%	94			70-130	Pass	
Ethylbenzene			%	92			70-130	Pass	
m&p-Xylenes			%	96			70-130	Pass	
o-Xylene			%	94			70-130	Pass	
Xylenes - Total			%	95			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
BTEX									
				Result 1					
Benzene		S18-No05688	NCP	%	91		70-130	Pass	
Toluene		S18-No05688	NCP	%	87		70-130	Pass	
Ethylbenzene		S18-No05688	NCP	%	83		70-130	Pass	
m&p-Xylenes		S18-No05688	NCP	%	88		70-130	Pass	
o-Xylene		S18-No05688	NCP	%	86		70-130	Pass	
Xylenes - Total		S18-No05688	NCP	%	87		70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
SPOCAS Suite									
				Result 1	Result 2	RPD			
pH-KCL		S18-Oc38759	CP	pH Units	8.3	8.3	<1	30%	Pass
pH-OX		S18-Oc38759	CP	pH Units	6.9	6.9	<1	30%	Pass
Acid trail - Titratable Actual Acidity		S18-Oc38759	CP	mol H+/t	< 2	< 2	<1	30%	Pass
Acid trail - Titratable Peroxide Acidity		S18-Oc38759	CP	mol H+/t	< 2	< 2	<1	30%	Pass
Acid trail - Titratable Sulfidic Acidity		S18-Oc38759	CP	mol H+/t	< 2	< 2	<1	30%	Pass
sulfidic - TAA equiv. S% pyrite		S18-Oc38759	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass
sulfidic - TPA equiv. S% pyrite		S18-Oc38759	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass
sulfidic - TSA equiv. S% pyrite		S18-Oc38759	CP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass
Sulfur - KCl Extractable		S18-Oc38759	CP	% S	< 0.02	< 0.02	<1	30%	Pass
Sulfur - Peroxide		S18-Oc38759	CP	% S	< 0.02	< 0.02	<1	30%	Pass
Sulfur - Peroxide Oxidisable Sulfur		S18-Oc38759	CP	% S	< 0.02	< 0.02	<1	30%	Pass
acidity - Peroxide Oxidisable Sulfur		S18-Oc38759	CP	mol H+/t	< 10	< 10	<1	30%	Pass
HCl Extractable Sulfur		S18-Oc38759	CP	% S	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur		S18-Oc38759	CP	% S	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur - acidity units		S18-Oc38759	CP	mol H+/t	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur - equivalent S% pyrite		S18-Oc38759	CP	% S	n/a	n/a	n/a	30%	Pass
Calcium - KCl Extractable		S18-Oc38759	CP	% Ca	0.14	0.13	1.0	30%	Pass
Calcium - Peroxide		S18-Oc38759	CP	% Ca	0.17	0.17	1.0	30%	Pass
Acid Reacted Calcium		S18-Oc38759	CP	% Ca	0.04	0.04	<1	30%	Pass
acidity - Acid Reacted Calcium		S18-Oc38759	CP	mol H+/t	18	18	<1	30%	Pass

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
sulfidic - Acid Reacted Ca equiv. S% pyrite	S18-Oc38759	CP	% S	0.03	0.03	<1	30%	Pass	
Magnesium - KCl Extractable	S18-Oc38759	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
Magnesium - Peroxide	S18-Oc38759	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
Acid Reacted Magnesium	S18-Oc38759	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass	
acidity - Acid Reacted Magnesium	S18-Oc38759	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
sulfidic - Acid Reacted Mg equiv. S% pyrite	S18-Oc38759	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Acid Neutralising Capacity (ANCE)	S18-Oc38759	CP	%CaCO3	0.26	0.25	1.0	30%	Pass	
Acid Neutralising Capacity - Acidity units (a-ANCE)	S18-Oc38759	CP	mol H+/t	52	51	1.0	30%	Pass	
ANC Fineness Factor	S18-Oc38759	CP	factor	1.5	1.5	<1	30%	Pass	
SPOCAS - Liming rate	S18-Oc38759	CP	kg CaCO3/t	< 1	< 1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-Oc38759	CP	%	9.9	9.7	2.0	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-No05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-No05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-No05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-No05687	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-No05687	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-No05687	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
R20	This sample is a Trip Spike and therefore all results are reported as a percentage
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Nibha Vaidya	Analytical Services Manager
Myles Clark	Senior Analyst-SPOCAS (QLD)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 625350-W
Project name PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Oct 31, 2018

Client Sample ID			QC502_311020 18
Sample Matrix			Water
Eurofins mgt Sample No.			S18-Oc38766
Date Sampled			Oct 31, 2018
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	101
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.013

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
BTEX	Melbourne	Nov 01, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Metals M8	Melbourne	Nov 01, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

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Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
External Laboratory											
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID						
1	TP113_1.6-1.7	Oct 31, 2018		Soil	S18-Oc38759					X	X
2	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-Oc38760					X	X
3	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-Oc38761					X	X
4	TP116_3.3-3.4	Oct 31, 2018		Soil	S18-Oc38762					X	X
5	TP117_1.8-1.9	Oct 31, 2018		Soil	S18-Oc38763					X	X
6	QC302_31102 018 (TB)	Oct 31, 2018		Soil	S18-Oc38764				X		
7	QC402_31102 018 (TS)	Oct 31, 2018		Soil	S18-Oc38765				X		
8	QC502_31102	Oct 31, 2018		Water	S18-Oc38766		X	X			

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Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
018											
9	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39166	X					
10	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-Oc39167	X					
11	TP113_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39168	X					
12	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-Oc39170	X					
13	TP114_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39171	X					
14	TP114_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39172	X					
15	TP114_3.5-3.6	Oct 31, 2018		Soil	S18-Oc39173	X					
16	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-Oc39175	X					
17	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39176	X					
18	TP115_1.1-1.2	Oct 31, 2018		Soil	S18-Oc39177	X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
19	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-Oc39178	X					
20	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-Oc39180	X					
21	TP115_3.0-3.1_F	Oct 31, 2018		Building Materials	S18-Oc39181	x					
22	TP111_0.5-0.6	Oct 31, 2018		Soil	S18-Oc39182	X					
23	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39183	X					
24	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-Oc39184	X					
25	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-Oc39185	X					
26	TP110_0.0-0.05	Oct 31, 2018		Soil	S18-Oc39186	x					
27	TP110_0.1-0.15	Oct 31, 2018		Soil	S18-Oc39187	x					
28	TP116_0.7-0.8	Oct 31, 2018		Soil	S18-Oc39188	X					

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625350
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Oct 31, 2018 4:29 PM
Due: Nov 7, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						HOLD	Metals M8	BTEX	BTEX	SPOCAS Suite	Moisture Set
Melbourne Laboratory - NATA Site # 1254 & 14271							X	X			
Sydney Laboratory - NATA Site # 18217						X			X		
Brisbane Laboratory - NATA Site # 20794										X	X
Perth Laboratory - NATA Site # 23736											
29	TP116 1.9-2.0	Oct 31, 2018		Soil	S18-Oc39189	X					
30	TP117 0.4-0.5	Oct 31, 2018		Soil	S18-Oc39191	X					
31	TP118 1.0-1.1	Oct 31, 2018		Soil	S18-Oc39193	X					
32	TP118 1.8-1.9	Oct 31, 2018		Soil	S18-Oc39194	X					
33	TP118 2.0-2.1	Oct 31, 2018		Soil	S18-Oc39195	X					
34	TP111 1.1-1.2	Oct 31, 2018		Soil	S18-Oc39253	X					
Test Counts						26	1	3	3	5	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
BTEX									
Benzene			mg/L	< 0.001			0.001	Pass	
Toluene			mg/L	< 0.001			0.001	Pass	
Ethylbenzene			mg/L	< 0.001			0.001	Pass	
m&p-Xylenes			mg/L	< 0.002			0.002	Pass	
o-Xylene			mg/L	< 0.001			0.001	Pass	
Xylenes - Total			mg/L	< 0.003			0.003	Pass	
Method Blank									
Heavy Metals									
Arsenic			mg/L	< 0.001			0.001	Pass	
Cadmium			mg/L	< 0.0002			0.0002	Pass	
Chromium			mg/L	< 0.001			0.001	Pass	
Copper			mg/L	< 0.001			0.001	Pass	
Lead			mg/L	< 0.001			0.001	Pass	
Mercury			mg/L	< 0.0001			0.0001	Pass	
Nickel			mg/L	< 0.001			0.001	Pass	
Zinc			mg/L	< 0.005			0.005	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	101			70-130	Pass	
Toluene			%	90			70-130	Pass	
Ethylbenzene			%	82			70-130	Pass	
m&p-Xylenes			%	82			70-130	Pass	
Xylenes - Total			%	84			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	95			80-120	Pass	
Cadmium			%	95			80-120	Pass	
Chromium			%	92			80-120	Pass	
Copper			%	94			80-120	Pass	
Lead			%	92			80-120	Pass	
Mercury			%	89			75-125	Pass	
Nickel			%	94			80-120	Pass	
Zinc			%	98			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-Oc37667	NCP	%	98			75-125	Pass	
Cadmium	M18-Oc37667	NCP	%	98			75-125	Pass	
Chromium	M18-Oc37667	NCP	%	97			75-125	Pass	
Copper	M18-Oc37667	NCP	%	98			75-125	Pass	
Lead	M18-Oc37667	NCP	%	95			75-125	Pass	
Mercury	M18-Oc37667	NCP	%	93			70-130	Pass	
Nickel	M18-Oc37667	NCP	%	99			75-125	Pass	
Zinc	M18-Oc37667	NCP	%	101			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M18-Oc35752	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M18-Oc35752	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M18-Oc37667	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M18-Oc37667	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M18-Oc37667	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M18-Oc37667	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)



Glenn Jackson

National Operations Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Chain of Custody Documentation

Laboratory: EUROFINS MGT
Address: MARS ROAD, LAKE CAFE
Contact:
Phone: NIBHA VIADYA

Job Number: 51693	Purchase Order:
Project Name: Phase 2 core diligence	Quote No: 215-MED-1044
Sampled By: AC/RM	Turn Around Time: Standard
Project Manager: R. McInerney	Page: 1 of 4
Email Report To: aliciaacumh@boston.com	Phone/Mobile:

Sample Information			Container Information			
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles
	SS01-01112018	Soil	7-11-18	pm	Glass Jar + Asst. Bag	2
	SS02 - "					
	SS03 - "					
	SS04 - "					
	SS05 - "					
	SS06 - "					
	SS07 - "					
	SS08 - "					
	SS09 - "					
	SS10 - "					
	SS11 - "					
	SS12 - "					
	SS13 - "					
	SS14 - "					
	SS15 - "					
	SS16 - "					
	SS17 - "					
	SS18 - "					
	SS19 - "					
	SS20 - "					

[illegible]

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name: Alicia Cruz

Signature: 

Date: 6/11/18

Relinquished By:		Method of Shipment (if applicable):		Received by:	
Name/Signature: <i>R. McKim</i>	Date: <i>1/11/18</i>	Carrier / Reference #:	Name/Signature: <i>Elvis</i>	Date: <i>1/11/18</i>	
Of: <i>Simon</i>	Time:	Date/Time:	Of: <i>Eurofins</i>	Time: <i>5:17pm</i>	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; CU = Sodium Metasilicate Preserved

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

ated by: _____
d by: _____

Chain of Custody Documentation

Laboratory: **EUROFINS MGT**
Address: **MAKES ROAD, LANE 6 CAFE**
Contact: **NIBHA VALDYA**
Phone:

Job Number: 516913	Purchase Order:
Project Name: Phase 2 Due Diligence	Quote No: 33490000
Sampled By: AC/RM	Turn Around Time:
Project Manager: K. McKinnon	Page: 2 of 4
Email Report To: see page 1	Phone/Mobile:

Sample Information					Container Information		Analysis Required										Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles	ON HOLD	TRH	BTX	PAH	Heavy Metals	PLB	OC/OCp	Asbestos (presence/absence)	PPAS		
	SP02-011208_F	Fragment	1-11-18	pm	Bag	1	X										11.33°C
	SP05-011208_F					1											625685
	SP15-011208_F					1											
	SP17-011208_F					1											
	TP112-0.5-0.6	Soil		pm	Glass Jar	1											
	" -1.6-1.7				" "	1											
	" -1.9-2.0				Glass + PPAS	2											
	TP119-0.9-1.0				Glass	1											
	" -1.2-1.3					1											
	" -1.6-1.7					1											
	" -2.4-2.5					2											
	" -2.8-2.9				Glass + PPAS Jar	1											
	" -3.7-3.8				Glass Jar	1											
	TP120-0.2-0.3				Glass Jar	2											
	TP120-1.8-1.9				" "	2											
	QC105-0112018			pm	Glass Jar + Asb Bag	2											
	QC205-0112018			pm	" "	2											
	TP112-0.5-0.6			am	Bag	1											PLEASE FORWARD TO ALS
	TP119-1.8-1.7				Bag	1											
	QC503-0112018	Water		pm	2x Vial and 1 Plastic	3			X		X						

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name:

Signature:

Date:

Relinquished By:

Name/Signature: **R. McKinnon**
Of: **Senversa**

Date: **1/11/18**
Time:

Method of Shipment (If applicable):

Carrier / Reference #:

Date/Time:

Carrier / Reference #:

Date/Time:

Carrier / Reference #:

Date/Time:

Received by:

Name/Signature: **ANIS D**
Of: **EUROFINS**

Date: **1/11/18**
Time: **5:17 PM**

Name/Signature:

Of:

Date:

Name/Signature:

Of:

Date:

Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Completed by:

Checked by:



CHAIN OF CUSTODY RECORD

Eurofins | mgt ABN 50 005 085 521

☒ Sydney LaboratoryUnit F3 Bld F 16 Mars Road Lane Cove West NSW 2066
02 9900 8400 EnviroSampleNSW@eurofins.com☐ Brisbane LaboratoryUnit 1 21 Smallwood Place Murarie QLD 4172
07 3802 4503 EnviroSampleQLD@eurofins.com☐ Perth LaboratoryUnit 2 91 Leach Highway Kewdale WA 6105
08 9251 8600 EnviroSampleWA@eurofins.com☐ Melbourne Laboratory2 Kingston Town Close Oakleigh VIC 3166
03 8564 5000 EnviroSampleVic@eurofins.com

3 of 4

Company		Senvirogen		Project No		S16913		Project Manager		Ian Batterley		Sampler(s)		R. McKinnon			
Address		201 Kent St The Grafton Bond Building, Sydney		Project Name		Phase 2 Due Diligence		EDD Format		ESdat		Handed over by		11			
Contact Name		Ian Batterley		Analyses Which media or impurities, please specify 'Total' or 'Filtered' SUITE code must be used to attract SUITE pricing		10/10/18								Email for Invoice			
Phone No		0466 649 249												Email for Results		ian.batterley@senvirogen.com.au	
Special Directions														Containers		Required Turnaround Time (TAT)	
Purchase Order														Change container type & size if necessary		Default will be 5 days if not stated	
Quote ID No																	
No		Client Sample ID		Sampled Date/Time dd/mm/yy hh:mm		Matrix Solid (S) Water (W)											
1		SB03-01-02		1/11/18		S		X									
2		-0.7-0.8		1													
3		-1.9-2.0															
4		-2.7-2.8															
5		-2.9-3.0															
6		-3.9-4.0												Please freeze ASS bag			
7		-5.5-5.6															
8		SB04-01-02															
9		SB05-09-1.0															
10		-1.9-2.0															
		Total Counts		10													
Method of Shipment		☐ Courier (#)		☐ Hand Delivered		☐ Postal		Name		R. McKinnon		Signature		Date			
Eurofins mgt Laboratory Use Only		Received By		Elvis D		SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Temperature			
		Received By				SYD BNE MEL PER ADL NTL DRW		Signature		Date		Time		Report No			

Enviro Sample NSW

From: Alicia Cronly <Alicia.Cronly@senversa.com.au>
Sent: Monday, 5 November 2018 1:24 PM
To: Enviro Sample NSW
Cc: Roxanne McKinnon
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 625685 : Site PHASE 2 DUE DILIGENCE (S16913)

Follow Up Flag: Follow up
Flag Status: Flagged

Good afternoon,

Could I please get the following sample IDs changed:

For all samples on the first page of the COC – can the “SS” part of the sample ID please be changed to “SP”.

For example – “SS01_01112018” be changed to “SP01_01112018”

Thanks in advance,

Alicia Cronly
Environmental Scientist



Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent St, Sydney NSW 2000

m: +61 432 878 912 | e: alicia.cronly@senversa.com.au
t: +61 2 8252 0000 | w: www.senversa.com.au | www.linkedin.com/company/senversa

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Senversa management systems are certified to ISO 9001 (Quality) and OHSAS 18001 & ASNZS 4801 (Health and Safety) standards.
Please consider the environment before printing this email. Senversa is a carbon neutral company and certified B Corp.

From: EnviroSampleNSW@eurofins.com <EnviroSampleNSW@eurofins.com>
Sent: Thursday, 1 November 2018 8:09 PM
To: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Cc: Ian Batterley <ian.batterley@senversa.com.au>; Alicia Cronly <Alicia.Cronly@senversa.com.au>
Subject: Eurofins | mgt Sample Receipt Advice - Report 625685 : Site PHASE 2 DUE DILIGENCE (S16913)

Dear Valued Client,

Please find attached a Sample Receipt Advice (SRA), a Summary Sheet and a scanned copy of your Chain-of-Custody (COC). It is important that you check this documentation to ensure that the details are correct such as the Client Job Number, Turn Around Time, any comments in the Notes section and sample numbers as well as the requested analysis. If there are any irregularities then please contact your Eurofins | mgt Analytical Services Manager as soon as possible to make certain that they get changed.

Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Roxanne McKinnon**
Project name: **PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Nov 1, 2018 5:17 PM**
Eurofins | mgt reference: **625685**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

QC205_01112018 sent to ALS for analysis. Additional sample SP19_011120 18_F received and placed on hold.

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Roxanne McKinnon - roxanne.mckinnon@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625685
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 1, 2018 5:17 PM
Due: Nov 8, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	SP01_01112018	Nov 01, 2018		Soil	S18-No01991	X					X	X	X
2	SP02_01112018	Nov 01, 2018		Soil	S18-No01992	X					X	X	X
3	SP03_01112018	Nov 01, 2018		Soil	S18-No01993	X					X	X	X
4	SP04_01112018	Nov 01, 2018		Soil	S18-No01994	X					X	X	X
5	SP05_01112018	Nov 01, 2018		Soil	S18-No01995	X					X	X	X
6	SP06_01112018	Nov 01, 2018		Soil	S18-No01996	X					X	X	X

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625685
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 1, 2018 5:17 PM
Due: Nov 8, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
18													
7	SP07_01112018	Nov 01, 2018		Soil	S18-No01997	x					x	x	x
8	SP08_01112018	Nov 01, 2018		Soil	S18-No01998	x					x	x	x
9	SP09_01112018	Nov 01, 2018		Soil	S18-No01999	x					x	x	x
10	SP10_01112018	Nov 01, 2018		Soil	S18-No02000	x					x	x	x
11	SP11_01112018	Nov 01, 2018		Soil	S18-No02001	x					x	x	x
12	SP12_01112018	Nov 01, 2018		Soil	S18-No02002	x					x	x	x
13	SP13_01112018	Nov 01, 2018		Soil	S18-No02003	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
18													
14	SP14_01112018	Nov 01, 2018		Soil	S18-No02004	x					x	x	x
15	SP15_01112018	Nov 01, 2018		Soil	S18-No02005	x					x	x	x
16	SP16_01112018	Nov 01, 2018		Soil	S18-No02006	x					x	x	x
17	SP17_01112018	Nov 01, 2018		Soil	S18-No02007	x					x	x	x
18	SP18_01112018	Nov 01, 2018		Soil	S18-No02008	x					x	x	x
19	SP19_01112018	Nov 01, 2018		Soil	S18-No02009	x					x	x	x
20	SP20_011120	Nov 01, 2018		Soil	S18-No02010	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
21	QC503_01112018	Nov 01, 2018		Water	S18-No02011				X	X			
22	SP02_01112018_F	Nov 01, 2018		Building Materials	S18-No02012			X					
23	SP05_01112018_F	Nov 01, 2018		Building Materials	S18-No02013			X					
24	SP15_01112018_F	Nov 01, 2018		Building Materials	S18-No02014			X					
25	SP17_01112018_F	Nov 01, 2018		Building Materials	S18-No02015			X					
26	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02016		X						
27	TP112_1.6-1.7	Nov 01, 2018		Soil	S18-No02017		X						
28	TP112_1.9-2.0	Nov 01, 2018		Soil	S18-No02018		X						

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
29	TP119_0.9-1.0	Nov 01, 2018		Soil	S18-No02019		X						
30	TP119_1.2-1.3	Nov 01, 2018		Soil	S18-No02020		X						
31	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02021		X						
32	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No02022		X						
33	TP119_2.8-2.9	Nov 01, 2018		Soil	S18-No02023		X						
34	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No02024		X						
35	TP120_0.2-0.3	Nov 01, 2018		Soil	S18-No02025		X						
36	TP120_1.8-1.9	Nov 01, 2018		Soil	S18-No02026		X						
37	QC105_01112 018	Nov 01, 2018		Soil	S18-No02027		X						
38	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02028			X					
39	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02029			X					

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
40	SB03_0.1-0.2	Nov 01, 2018		Soil	S18-No02030		X						
41	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No02031		X						
42	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No02032		X						
43	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No02033		X						
44	SB03_2.9-3.0	Nov 01, 2018		Soil	S18-No02034		X						
45	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No02035		X						
46	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No02036		X						
47	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No02037		X						
48	SB05_0.9-1.0	Nov 01, 2018		Soil	S18-No02038		X						
49	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No02039		X						
50	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No02040		X						
51	SB05_4.9-5.0	Nov 01, 2018		Soil	S18-No02041		X						

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
52	QC303_01112 018 (TB)	Nov 01, 2018		Soil	S18-No02042			X					
53	QC403_01112 018 (TS)	Nov 01, 2018		Soil	S18-No02043			X					
54	LAB SPIKE	Nov 01, 2018		Soil	S18-No02044			X					
55	SP19_011120 18_F	Nov 01, 2018		Building Materials	S18-No02051			X					
Test Counts						20	34	34	1	1	20	20	20

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000

Attention: Roxanne McKinnon
Report 625685-AID
Project Name PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 01, 2018
Date Reported Nov 09, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name PHASE 2 DUE DILIGENCE
Project ID S16913
Date Sampled Nov 01, 2018
Report 625685-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SP01_01112018	18-No01991	Nov 01, 2018	Approximate Sample 915g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP02_01112018	18-No01992	Nov 01, 2018	Approximate Sample 744g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP03_01112018	18-No01993	Nov 01, 2018	Approximate Sample 923g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP04_01112018	18-No01994	Nov 01, 2018	Approximate Sample 924g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP05_01112018	18-No01995	Nov 01, 2018	Approximate Sample 740g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP06_01112018	18-No01996	Nov 01, 2018	Approximate Sample 832g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP07_01112018	18-No01997	Nov 01, 2018	Approximate Sample 865g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP08_01112018	18-No01998	Nov 01, 2018	Approximate Sample 748g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SP09_01112018	18-No01999	Nov 01, 2018	Approximate Sample 724g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP10_01112018	18-No02000	Nov 01, 2018	Approximate Sample 841g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP11_01112018	18-No02001	Nov 01, 2018	Approximate Sample 814g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP12_01112018	18-No02002	Nov 01, 2018	Approximate Sample 732g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP13_01112018	18-No02003	Nov 01, 2018	Approximate Sample 850g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP14_01112018	18-No02004	Nov 01, 2018	Approximate Sample 730g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP15_01112018	18-No02005	Nov 01, 2018	Approximate Sample 708g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP16_01112018	18-No02006	Nov 01, 2018	Approximate Sample 643g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP17_01112018	18-No02007	Nov 01, 2018	Approximate Sample 810g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP18_01112018	18-No02008	Nov 01, 2018	Approximate Sample 778g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SP19_01112018	18-No02009	Nov 01, 2018	Approximate Sample 720g Sample consisted of: Dark brown coarse-grained clayey soil, rocks and bitumin fragments.	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SP20_01112018	18-No02010	Nov 01, 2018	Approximate Sample 780g Sample consisted of: Dark brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Nov 01, 2018	Indefinite

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Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	SP01_01112018	Nov 01, 2018		Soil	S18-No01991	X					X	X	X
2	SP02_01112018	Nov 01, 2018		Soil	S18-No01992	X					X	X	X
3	SP03_01112018	Nov 01, 2018		Soil	S18-No01993	X					X	X	X
4	SP04_01112018	Nov 01, 2018		Soil	S18-No01994	X					X	X	X
5	SP05_01112018	Nov 01, 2018		Soil	S18-No01995	X					X	X	X
6	SP06_01112018	Nov 01, 2018		Soil	S18-No01996	X					X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
7	SP07_01112018	Nov 01, 2018		Soil	S18-No01997	x					x	x	x
8	SP08_01112018	Nov 01, 2018		Soil	S18-No01998	x					x	x	x
9	SP09_01112018	Nov 01, 2018		Soil	S18-No01999	x					x	x	x
10	SP10_01112018	Nov 01, 2018		Soil	S18-No02000	x					x	x	x
11	SP11_01112018	Nov 01, 2018		Soil	S18-No02001	x					x	x	x
12	SP12_01112018	Nov 01, 2018		Soil	S18-No02002	x					x	x	x
13	SP13_01112018	Nov 01, 2018		Soil	S18-No02003	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
14	SP14_01112018	Nov 01, 2018		Soil	S18-No02004	x					x	x	x
15	SP15_01112018	Nov 01, 2018		Soil	S18-No02005	x					x	x	x
16	SP16_01112018	Nov 01, 2018		Soil	S18-No02006	x					x	x	x
17	SP17_01112018	Nov 01, 2018		Soil	S18-No02007	x					x	x	x
18	SP18_01112018	Nov 01, 2018		Soil	S18-No02008	x					x	x	x
19	SP19_01112018	Nov 01, 2018		Soil	S18-No02009	x					x	x	x
20	SP20_011120	Nov 01, 2018		Soil	S18-No02010	x					x	x	x

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Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
21	QC503_01112018	Nov 01, 2018		Water	S18-No02011				X	X			
22	SP02_01112018_F	Nov 01, 2018		Building Materials	S18-No02012			X					
23	SP05_01112018_F	Nov 01, 2018		Building Materials	S18-No02013			X					
24	SP15_01112018_F	Nov 01, 2018		Building Materials	S18-No02014			X					
25	SP17_01112018_F	Nov 01, 2018		Building Materials	S18-No02015			X					
26	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02016		X						
27	TP112_1.6-1.7	Nov 01, 2018		Soil	S18-No02017		X						
28	TP112_1.9-2.0	Nov 01, 2018		Soil	S18-No02018		X						

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625685
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 1, 2018 5:17 PM
Due: Nov 8, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
29	TP119_0.9-1.0	Nov 01, 2018		Soil	S18-No02019		X						
30	TP119_1.2-1.3	Nov 01, 2018		Soil	S18-No02020		X						
31	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02021		X						
32	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No02022		X						
33	TP119_2.8-2.9	Nov 01, 2018		Soil	S18-No02023		X						
34	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No02024		X						
35	TP120_0.2-0.3	Nov 01, 2018		Soil	S18-No02025		X						
36	TP120_1.8-1.9	Nov 01, 2018		Soil	S18-No02026		X						
37	QC105_01112 018	Nov 01, 2018		Soil	S18-No02027		X						
38	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02028			X					
39	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02029			X					

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
40	SB03_0.1-0.2	Nov 01, 2018		Soil	S18-No02030		X						
41	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No02031		X						
42	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No02032		X						
43	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No02033		X						
44	SB03_2.9-3.0	Nov 01, 2018		Soil	S18-No02034		X						
45	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No02035		X						
46	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No02036		X						
47	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No02037		X						
48	SB05_0.9-1.0	Nov 01, 2018		Soil	S18-No02038		X						
49	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No02039		X						
50	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No02040		X						
51	SB05_4.9-5.0	Nov 01, 2018		Soil	S18-No02041		X						

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Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
52	QC303_01112 018 (TB)	Nov 01, 2018		Soil	S18-No02042			X					
53	QC403_01112 018 (TS)	Nov 01, 2018		Soil	S18-No02043			X					
54	LAB SPIKE	Nov 01, 2018		Soil	S18-No02044			X					
55	SP19_011120 18_F	Nov 01, 2018		Building Materials	S18-No02051			X					
Test Counts						20	34	34	1	1	20	20	20

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Authorised by:

Sayed Abu Senior Analyst-Asbestos (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
 Level 5, The Grafton Bond Building, 201 Kent Street
 SYDNEY
 NSW 2000



NATA Accredited
 Accreditation Number 1261
 Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
 The results of the tests, calibrations and/or
 measurements included in this document are traceable
 to Australian/national standards.

Attention: Roxanne McKinnon

Report 625685-S
 Project name PHASE 2 DUE DILIGENCE
 Project ID S16913
 Received Date Nov 01, 2018

Client Sample ID			SP01_01112018	SP02_01112018	SP03_01112018	SP04_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01991	S18-No01992	S18-No01993	S18-No01994
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	130	210
TRH C29-C36	50	mg/kg	< 50	< 50	61	78
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	191	288
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	68	92	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	160	250
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	160	250
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SP01_01112018	SP02_01112018	SP03_01112018	SP04_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01991	S18-No01992	S18-No01993	S18-No01994
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	79	99	85	98
p-Terphenyl-d14 (surr.)	1	%	78	98	83	89
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	0.5
Dibutylchloroendate (surr.)	1	%	123	121	114	74
Tetrachloro-m-xylene (surr.)	1	%	92	98	87	66
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SP01_01112018	SP02_01112018	SP03_01112018	SP04_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01991	S18-No01992	S18-No01993	S18-No01994
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	67	99	70	86
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	123	121	114	74
Tetrachloro-m-xylene (surr.)	1	%	92	98	87	66
Heavy Metals						
Arsenic	2	mg/kg	8.1	13	8.2	8.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	6.4	13	6.0	6.7
Copper	5	mg/kg	28	26	28	31
Lead	5	mg/kg	18	30	16	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	22	< 5	22	24
Zinc	5	mg/kg	77	31	71	78
% Moisture	1	%	1.4	9.8	1.0	1.7

Client Sample ID			SP05_01112018	SP06_01112018	SP07_01112018	SP08_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01995	S18-No01996	S18-No01997	S18-No01998
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	78	64	71	65
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	104	100	104	96
p-Terphenyl-d14 (surr.)	1	%	98	93	98	94

Client Sample ID			SP05_01112018	SP06_01112018	SP07_01112018	SP08_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01995	S18-No01996	S18-No01997	S18-No01998
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	0.6	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.6	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.6	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	83	125	98	127
Tetrachloro-m-xylene (surr.)	1	%	70	107	86	104
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SP05_01112018	SP06_01112018	SP07_01112018	SP08_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01995	S18-No01996	S18-No01997	S18-No01998
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	94	103	101	84
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	83	125	98	127
Tetrachloro-m-xylene (surr.)	1	%	70	107	86	104
Heavy Metals						
Arsenic	2	mg/kg	3.6	2.8	6.9	7.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.9	11	8.1	8.5
Copper	5	mg/kg	9.1	10	33	22
Lead	5	mg/kg	49	100	21	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	6.5	64	24
Zinc	5	mg/kg	58	91	200	120
% Moisture	1	%	8.5	7.1	5.3	1.8

Client Sample ID			SP09_01112018	SP10_01112018	SP11_01112018	SP12_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01999	S18-No02000	S18-No02001	S18-No02002
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	23	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	140	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	52	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	215	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	65	72	86	87
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	160	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	160	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	0.8	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	102	85	96	98
p-Terphenyl-d14 (surr.)	1	%	112	80	92	95

Client Sample ID			SP09_01112018	SP10_01112018	SP11_01112018	SP12_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01999	S18-No02000	S18-No02001	S18-No02002
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	128	112	113	100
Tetrachloro-m-xylene (surr.)	1	%	103	74	84	83
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SP09_01112018	SP10_01112018	SP11_01112018	SP12_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No01999	S18-No02000	S18-No02001	S18-No02002
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	107	75	78	85
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	128	112	113	100
Tetrachloro-m-xylene (surr.)	1	%	103	74	84	83
Heavy Metals						
Arsenic	2	mg/kg	15	4.8	7.3	7.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	43	< 5	5.9	7.8
Copper	5	mg/kg	12	19	28	34
Lead	5	mg/kg	26	10	16	22
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	13	24	46
Zinc	5	mg/kg	17	47	75	160
% Moisture	1	%	8.5	< 1	1.3	2.2

Client Sample ID			SP13_01112018	SP14_01112018	SP15_01112018	SP16_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02003	S18-No02004	S18-No02005	S18-No02006
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	70	82	88	85
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	91	95	101	103
p-Terphenyl-d14 (surr.)	1	%	94	94	100	98

Client Sample ID			SP13_01112018	SP14_01112018	SP15_01112018	SP16_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02003	S18-No02004	S18-No02005	S18-No02006
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	108	76	113	81
Tetrachloro-m-xylene (surr.)	1	%	93	112	117	83
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SP13_01112018	SP14_01112018	SP15_01112018	SP16_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02003	S18-No02004	S18-No02005	S18-No02006
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	89	92	102	95
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloredate (surr.)	1	%	108	76	113	81
Tetrachloro-m-xylene (surr.)	1	%	93	112	117	83
Heavy Metals						
Arsenic	2	mg/kg	9.2	8.8	11	13
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	10	9.3	14	21
Copper	5	mg/kg	31	33	14	15
Lead	5	mg/kg	20	19	9.9	20
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	33	36	< 5	< 5
Zinc	5	mg/kg	120	190	6.1	14
% Moisture	1	%	2.8	1.9	5.5	6.9

Client Sample ID			SP17_01112018	SP18_01112018	SP19_01112018	SP20_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02007	S18-No02008	S18-No02009	S18-No02010
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	52	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	52	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	61	61	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	1.8	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	2.0	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	2.3	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	1.4	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	1.1	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	0.5	0.9	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.8	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	0.5	8.8	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	109	90	97
p-Terphenyl-d14 (surr.)	1	%	88	100	73	85

Client Sample ID			SP17_01112018	SP18_01112018	SP19_01112018	SP20_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02007	S18-No02008	S18-No02009	S18-No02010
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	0.08	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	0.24	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	0.22	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	0.54	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.74	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.2	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	102	86	92	74
Tetrachloro-m-xylene (surr.)	1	%	99	81	91	73
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SP17_01112018	SP18_01112018	SP19_01112018	SP20_01112018
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No02007	S18-No02008	S18-No02009	S18-No02010
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	88	105	94	91
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	102	86	92	74
Tetrachloro-m-xylene (surr.)	1	%	99	81	91	73
Heavy Metals						
Arsenic	2	mg/kg	14	5.0	2.5	3.3
Cadmium	0.4	mg/kg	0.6	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	24	12	9.5	7.6
Copper	5	mg/kg	83	15	9.1	12
Lead	5	mg/kg	390	25	39	44
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	13	6.4	< 5	< 5
Zinc	5	mg/kg	420	39	57	50
% Moisture	1	%	9.7	4.1	4.7	4.9

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B7			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8	Melbourne	Nov 05, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins mgt Suite B15			
Organochlorine Pesticides	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Melbourne	Nov 05, 2018	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Melbourne	Nov 01, 2018	14 Day
- Method: LTM-GEN-7080 Moisture			

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SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625685
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 1, 2018 5:17 PM
Due: Nov 8, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	SP01_01112018	Nov 01, 2018		Soil	S18-No01991	X					X	X	X
2	SP02_01112018	Nov 01, 2018		Soil	S18-No01992	X					X	X	X
3	SP03_01112018	Nov 01, 2018		Soil	S18-No01993	X					X	X	X
4	SP04_01112018	Nov 01, 2018		Soil	S18-No01994	X					X	X	X
5	SP05_01112018	Nov 01, 2018		Soil	S18-No01995	X					X	X	X
6	SP06_01112018	Nov 01, 2018		Soil	S18-No01996	X					X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
18													
7	SP07_01112018	Nov 01, 2018		Soil	S18-No01997	x					x	x	x
8	SP08_01112018	Nov 01, 2018		Soil	S18-No01998	x					x	x	x
9	SP09_01112018	Nov 01, 2018		Soil	S18-No01999	x					x	x	x
10	SP10_01112018	Nov 01, 2018		Soil	S18-No02000	x					x	x	x
11	SP11_01112018	Nov 01, 2018		Soil	S18-No02001	x					x	x	x
12	SP12_01112018	Nov 01, 2018		Soil	S18-No02002	x					x	x	x
13	SP13_01112018	Nov 01, 2018		Soil	S18-No02003	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
14	SP14_011120 18	Nov 01, 2018		Soil	S18-No02004	x					x	x	x
15	SP15_011120 18	Nov 01, 2018		Soil	S18-No02005	x					x	x	x
16	SP16_011120 18	Nov 01, 2018		Soil	S18-No02006	x					x	x	x
17	SP17_011120 18	Nov 01, 2018		Soil	S18-No02007	x					x	x	x
18	SP18_011120 18	Nov 01, 2018		Soil	S18-No02008	x					x	x	x
19	SP19_011120 18	Nov 01, 2018		Soil	S18-No02009	x					x	x	x
20	SP20_011120	Nov 01, 2018		Soil	S18-No02010	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
21	QC503_01112018	Nov 01, 2018		Water	S18-No02011				X	X			
22	SP02_01112018_F	Nov 01, 2018		Building Materials	S18-No02012			X					
23	SP05_01112018_F	Nov 01, 2018		Building Materials	S18-No02013			X					
24	SP15_01112018_F	Nov 01, 2018		Building Materials	S18-No02014			X					
25	SP17_01112018_F	Nov 01, 2018		Building Materials	S18-No02015			X					
26	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02016		X						
27	TP112_1.6-1.7	Nov 01, 2018		Soil	S18-No02017		X						
28	TP112_1.9-2.0	Nov 01, 2018		Soil	S18-No02018		X						

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
29	TP119_0.9-1.0	Nov 01, 2018		Soil	S18-No02019		X						
30	TP119_1.2-1.3	Nov 01, 2018		Soil	S18-No02020		X						
31	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02021		X						
32	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No02022		X						
33	TP119_2.8-2.9	Nov 01, 2018		Soil	S18-No02023		X						
34	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No02024		X						
35	TP120_0.2-0.3	Nov 01, 2018		Soil	S18-No02025		X						
36	TP120_1.8-1.9	Nov 01, 2018		Soil	S18-No02026		X						
37	QC105_01112 018	Nov 01, 2018		Soil	S18-No02027		X						
38	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02028			X					
39	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02029			X					

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
40	SB03_0.1-0.2	Nov 01, 2018		Soil	S18-No02030		X						
41	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No02031		X						
42	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No02032		X						
43	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No02033		X						
44	SB03_2.9-3.0	Nov 01, 2018		Soil	S18-No02034		X						
45	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No02035		X						
46	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No02036		X						
47	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No02037		X						
48	SB05_0.9-1.0	Nov 01, 2018		Soil	S18-No02038		X						
49	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No02039		X						
50	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No02040		X						
51	SB05_4.9-5.0	Nov 01, 2018		Soil	S18-No02041		X						

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
52	QC303_01112 018 (TB)	Nov 01, 2018		Soil	S18-No02042			X					
53	QC403_01112 018 (TS)	Nov 01, 2018		Soil	S18-No02043			X					
54	LAB SPIKE	Nov 01, 2018		Soil	S18-No02044			X					
55	SP19_011120 18_F	Nov 01, 2018		Building Materials	S18-No02051			X					
Test Counts						20	34	34	1	1	20	20	20

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	86			70-130	Pass	
TRH C10-C14	%	91			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	81			70-130	Pass	
Toluene	%	78			70-130	Pass	
Ethylbenzene	%	76			70-130	Pass	
m&p-Xylenes	%	78			70-130	Pass	
Xylenes - Total	%	78			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	81			70-130	Pass	
TRH C6-C10	%	81			70-130	Pass	
TRH >C10-C16	%	95			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	93			70-130	Pass	
Acenaphthylene	%	99			70-130	Pass	
Anthracene	%	101			70-130	Pass	
Benz(a)anthracene	%	92			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	81			70-130	Pass	
Benzo(g,h,i)perylene	%	95			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a,h)anthracene	%	101			70-130	Pass	
Fluoranthene	%	81			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	84			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	98			70-130	Pass	
Pyrene	%	80			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	128			70-130	Pass	
4,4'-DDE	%	101			70-130	Pass	
4,4'-DDT	%	72			70-130	Pass	
a-BHC	%	83			70-130	Pass	
Aldrin	%	94			70-130	Pass	
b-BHC	%	82			70-130	Pass	

Test				Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
d-BHC				%	80			70-130	Pass	
Dieldrin				%	98			70-130	Pass	
Endosulfan I				%	95			70-130	Pass	
Endosulfan II				%	98			70-130	Pass	
Endosulfan sulphate				%	87			70-130	Pass	
Endrin				%	81			70-130	Pass	
Endrin aldehyde				%	102			70-130	Pass	
Endrin ketone				%	98			70-130	Pass	
g-BHC (Lindane)				%	78			70-130	Pass	
Heptachlor				%	72			70-130	Pass	
Heptachlor epoxide				%	89			70-130	Pass	
Hexachlorobenzene				%	80			70-130	Pass	
Methoxychlor				%	90			70-130	Pass	
LCS - % Recovery										
Organophosphorus Pesticides										
Diazinon				%	106			70-130	Pass	
Dimethoate				%	79			70-130	Pass	
Ethion				%	121			70-130	Pass	
Fenitrothion				%	104			70-130	Pass	
Methyl parathion				%	102			70-130	Pass	
Mevinphos				%	114			70-130	Pass	
LCS - % Recovery										
Heavy Metals										
Arsenic				%	83			80-120	Pass	
Cadmium				%	84			80-120	Pass	
Chromium				%	97			80-120	Pass	
Copper				%	94			80-120	Pass	
Lead				%	90			80-120	Pass	
Mercury				%	105			75-125	Pass	
Nickel				%	95			80-120	Pass	
Zinc				%	92			80-120	Pass	
Test	Lab Sample ID	QA Source		Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery										
Polychlorinated Biphenyls					Result 1					
Aroclor-1260	M18-Oc35466	NCP	%		90			70-130	Pass	
Spike - % Recovery										
Heavy Metals					Result 1					
Arsenic	M18-No00871	NCP	%		77			75-125	Pass	
Cadmium	M18-No00871	NCP	%		77			75-125	Pass	
Chromium	M18-No00871	NCP	%		85			75-125	Pass	
Copper	M18-No00871	NCP	%		74			75-125	Fail	Q08
Lead	M18-No00871	NCP	%		96			75-125	Pass	
Mercury	M18-No00871	NCP	%		109			70-130	Pass	
Nickel	M18-No00871	NCP	%		80			75-125	Pass	
Zinc	M18-No00871	NCP	%		87			75-125	Pass	
Spike - % Recovery										
Organochlorine Pesticides					Result 1					
4,4'-DDD	S18-No01995	CP	%		120			70-130	Pass	
4,4'-DDE	S18-No01995	CP	%		102			70-130	Pass	
4,4'-DDT	S18-No01995	CP	%		89			70-130	Pass	
a-BHC	S18-No01995	CP	%		77			70-130	Pass	
Aldrin	S18-No01995	CP	%		87			70-130	Pass	
b-BHC	S18-No01995	CP	%		79			70-130	Pass	
d-BHC	S18-No01995	CP	%		80			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan I	S18-No01995	CP	%	89			70-130	Pass	
Endosulfan II	S18-No01995	CP	%	95			70-130	Pass	
Endosulfan sulphate	S18-No01995	CP	%	83			70-130	Pass	
Endrin	S18-No01995	CP	%	104			70-130	Pass	
Endrin aldehyde	S18-No01995	CP	%	92			70-130	Pass	
Endrin ketone	S18-No01995	CP	%	86			70-130	Pass	
g-BHC (Lindane)	S18-No01995	CP	%	75			70-130	Pass	
Heptachlor	S18-No01995	CP	%	82			70-130	Pass	
Heptachlor epoxide	S18-No01995	CP	%	86			70-130	Pass	
Hexachlorobenzene	S18-No01995	CP	%	77			70-130	Pass	
Methoxychlor	S18-No01995	CP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-No01996	CP	%	128			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-No01996	CP	%	108			70-130	Pass	
Toluene	S18-No01996	CP	%	104			70-130	Pass	
Ethylbenzene	S18-No01996	CP	%	104			70-130	Pass	
m&p-Xylenes	S18-No01996	CP	%	106			70-130	Pass	
o-Xylene	S18-No01996	CP	%	103			70-130	Pass	
Xylenes - Total	S18-No01996	CP	%	105			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-No01996	CP	%	100			70-130	Pass	
TRH C6-C10	S18-No01996	CP	%	121			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S18-No01998	CP	%	94			70-130	Pass	
Dimethoate	S18-No01998	CP	%	81			70-130	Pass	
Ethion	S18-No01998	CP	%	120			70-130	Pass	
Fenitrothion	S18-No01998	CP	%	93			70-130	Pass	
Methyl parathion	S18-No01998	CP	%	88			70-130	Pass	
Mevinphos	S18-No01998	CP	%	110			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	S18-No02002	CP	%	128			70-130	Pass	
4,4'-DDE	S18-No02002	CP	%	113			70-130	Pass	
4,4'-DDT	S18-No02002	CP	%	81			70-130	Pass	
a-BHC	S18-No02002	CP	%	86			70-130	Pass	
Aldrin	S18-No02002	CP	%	101			70-130	Pass	
b-BHC	S18-No02002	CP	%	88			70-130	Pass	
d-BHC	S18-No02002	CP	%	91			70-130	Pass	
Dieldrin	S18-No02002	CP	%	103			70-130	Pass	
Endosulfan I	S18-No02002	CP	%	102			70-130	Pass	
Endosulfan II	S18-No02002	CP	%	105			70-130	Pass	
Endosulfan sulphate	S18-No02002	CP	%	98			70-130	Pass	
Endrin	S18-No02002	CP	%	110			70-130	Pass	
Endrin aldehyde	S18-No02002	CP	%	109			70-130	Pass	
Endrin ketone	S18-No02002	CP	%	104			70-130	Pass	
g-BHC (Lindane)	S18-No02002	CP	%	86			70-130	Pass	
Heptachlor	S18-No02002	CP	%	89			70-130	Pass	
Heptachlor epoxide	S18-No02002	CP	%	97			70-130	Pass	
Hexachlorobenzene	S18-No02002	CP	%	88			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1		Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	S18-No02002	CP	%	70		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	S18-No02006	CP	%	109		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S18-No02006	CP	%	90		70-130	Pass	
Toluene	S18-No02006	CP	%	94		70-130	Pass	
Ethylbenzene	S18-No02006	CP	%	98		70-130	Pass	
m&p-Xylenes	S18-No02006	CP	%	100		70-130	Pass	
o-Xylene	S18-No02006	CP	%	98		70-130	Pass	
Xylenes - Total	S18-No02006	CP	%	99		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	S18-No02006	CP	%	103		70-130	Pass	
TRH C6-C10	S18-No02006	CP	%	104		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1				
TRH C6-C9	S18-No02008	CP	%	104		70-130	Pass	
TRH C10-C14	S18-No02008	CP	%	80		70-130	Pass	
Spike - % Recovery								
BTEX				Result 1				
Benzene	S18-No02008	CP	%	95		70-130	Pass	
Toluene	S18-No02008	CP	%	92		70-130	Pass	
Ethylbenzene	S18-No02008	CP	%	88		70-130	Pass	
m&p-Xylenes	S18-No02008	CP	%	93		70-130	Pass	
o-Xylene	S18-No02008	CP	%	92		70-130	Pass	
Xylenes - Total	S18-No02008	CP	%	92		70-130	Pass	
Spike - % Recovery								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1				
Naphthalene	S18-No02008	CP	%	93		70-130	Pass	
TRH C6-C10	S18-No02008	CP	%	101		70-130	Pass	
TRH >C10-C16	S18-No02008	CP	%	84		70-130	Pass	
Spike - % Recovery								
Organophosphorus Pesticides				Result 1				
Diazinon	S18-No02008	CP	%	128		70-130	Pass	
Dimethoate	S18-No02008	CP	%	91		70-130	Pass	
Ethion	S18-No02008	CP	%	122		70-130	Pass	
Fenitrothion	S18-No02008	CP	%	87		70-130	Pass	
Methyl parathion	S18-No02008	CP	%	80		70-130	Pass	
Mevinphos	S18-No02008	CP	%	101		70-130	Pass	
Spike - % Recovery								
Polycyclic Aromatic Hydrocarbons				Result 1				
Acenaphthene	S18-No02010	CP	%	92		70-130	Pass	
Acenaphthylene	S18-No02010	CP	%	99		70-130	Pass	
Anthracene	S18-No02010	CP	%	98		70-130	Pass	
Benz(a)anthracene	S18-No02010	CP	%	96		70-130	Pass	
Benzo(a)pyrene	S18-No02010	CP	%	95		70-130	Pass	
Benzo(b&j)fluoranthene	S18-No02010	CP	%	83		70-130	Pass	
Benzo(g,h,i)perylene	S18-No02010	CP	%	101		70-130	Pass	
Benzo(k)fluoranthene	S18-No02010	CP	%	99		70-130	Pass	
Chrysene	S18-No02010	CP	%	89		70-130	Pass	
Dibenz(a,h)anthracene	S18-No02010	CP	%	108		70-130	Pass	
Fluoranthene	S18-No02010	CP	%	84		70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fluorene	S18-No02010	CP	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S18-No02010	CP	%	88			70-130	Pass	
Naphthalene	S18-No02010	CP	%	90			70-130	Pass	
Phenanthrene	S18-No02010	CP	%	92			70-130	Pass	
Pyrene	S18-No02010	CP	%	80			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-BHC (Lindane)	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S18-No01991	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S18-No01991	CP	mg/kg	< 1	< 1	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S18-No01991	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
4.4'-DDD	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-BHC	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-BHC	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-BHC	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Endrin ketone	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No01995	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S18-No01995	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S18-No01995	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-No02000	CP	%	< 1	< 1	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No02001	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S18-No02001	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S18-No02001	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-No02005	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-No02005	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-No02005	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-No02005	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-No02005	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No02005	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S18-No02005	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-No02005	CP	mg/kg	11	11	1.0	30%	Pass
Cadmium	S18-No02005	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-No02005	CP	mg/kg	14	15	9.0	30%	Pass
Copper	S18-No02005	CP	mg/kg	14	15	7.0	30%	Pass
Lead	S18-No02005	CP	mg/kg	9.9	11	5.0	30%	Pass
Mercury	S18-No02005	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass

Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Nickel	S18-No02005	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-No02005	CP	mg/kg	6.1	6.4	5.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-No02007	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C10-C14	S18-No02007	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S18-No02007	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH C29-C36	S18-No02007	CP	mg/kg	< 50	< 50	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S18-No02007	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-No02007	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-No02007	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-No02007	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-No02007	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-No02007	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH >C10-C16	S18-No02007	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-No02007	CP	mg/kg	< 100	< 100	<1	30%	Pass
TRH >C34-C40	S18-No02007	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-No02007	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No02007	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Disulfoton	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No02007	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No02007	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No02007	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-No02009	CP	mg/kg	0.9	< 0.5	66	30%	Fail Q15
Benzo(a)pyrene	S18-No02009	CP	mg/kg	1.4	0.5	95	30%	Fail Q15
Benzo(b&j)fluoranthene	S18-No02009	CP	mg/kg	0.9	< 0.5	76	30%	Fail Q15
Benzo(g,h,i)perylene	S18-No02009	CP	mg/kg	1.1	< 0.5	86	30%	Fail Q15
Benzo(k)fluoranthene	S18-No02009	CP	mg/kg	0.9	< 0.5	78	30%	Fail Q15
Chrysene	S18-No02009	CP	mg/kg	0.9	< 0.5	69	30%	Fail Q15
Dibenz(a,h)anthracene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-No02009	CP	mg/kg	0.9	0.9	5.0	30%	Pass
Fluorene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-No02009	CP	mg/kg	0.8	< 0.5	90	30%	Fail Q15
Naphthalene	S18-No02009	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-No02009	CP	mg/kg	< 0.5	0.6	59	30%	Fail Q15
Pyrene	S18-No02009	CP	mg/kg	1.0	0.8	28	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No02009	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Disulfoton	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfothion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No02009	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No02009	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No02009	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-No02010	CP	%	4.9	4.7	4.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference
Q15	The RPD reported passes Eurofins mgt's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Joseph Edouard	Senior Analyst-Organic (VIC)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

Eurofins | mgt shall not be liable for loss, cost, damages or expenses incurred by the client, or any other person or company, resulting from the use of any information or interpretation given in this report. In no case shall Eurofins | mgt be liable for consequential damages including, but not limited to, lost profits, damages for failure to meet deadlines and lost production arising from this report. This document shall not be reproduced except in full and relates only to the items tested. Unless indicated otherwise, the tests were performed on the samples as received.

Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Roxanne McKinnon

Report **625685-W**
Project name PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 01, 2018

Client Sample ID			QC503_011120 18
Sample Matrix			Water
Eurofins mgt Sample No.			S18-No02011
Date Sampled			Nov 01, 2018
Test/Reference	LOR	Unit	
BTEX			
Benzene	0.001	mg/L	< 0.001
Toluene	0.001	mg/L	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002
o-Xylene	0.001	mg/L	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	107
Heavy Metals			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	0.007

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B7			
BTEX	Melbourne	Nov 05, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Metals M8	Melbourne	Nov 05, 2018	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 625685
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 1, 2018 5:17 PM
Due: Nov 8, 2018
Priority: 5 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
External Laboratory													
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID								
1	SP01_01112018	Nov 01, 2018		Soil	S18-No01991	X					X	X	X
2	SP02_01112018	Nov 01, 2018		Soil	S18-No01992	X					X	X	X
3	SP03_01112018	Nov 01, 2018		Soil	S18-No01993	X					X	X	X
4	SP04_01112018	Nov 01, 2018		Soil	S18-No01994	X					X	X	X
5	SP05_01112018	Nov 01, 2018		Soil	S18-No01995	X					X	X	X
6	SP06_01112018	Nov 01, 2018		Soil	S18-No01996	X					X	X	X

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
18													
7	SP07_01112018	Nov 01, 2018		Soil	S18-No01997	x					x	x	x
8	SP08_01112018	Nov 01, 2018		Soil	S18-No01998	x					x	x	x
9	SP09_01112018	Nov 01, 2018		Soil	S18-No01999	x					x	x	x
10	SP10_01112018	Nov 01, 2018		Soil	S18-No02000	x					x	x	x
11	SP11_01112018	Nov 01, 2018		Soil	S18-No02001	x					x	x	x
12	SP12_01112018	Nov 01, 2018		Soil	S18-No02002	x					x	x	x
13	SP13_01112018	Nov 01, 2018		Soil	S18-No02003	x					x	x	x

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Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
14	SP14_01112018	Nov 01, 2018		Soil	S18-No02004	x					x	x	x
15	SP15_01112018	Nov 01, 2018		Soil	S18-No02005	x					x	x	x
16	SP16_01112018	Nov 01, 2018		Soil	S18-No02006	x					x	x	x
17	SP17_01112018	Nov 01, 2018		Soil	S18-No02007	x					x	x	x
18	SP18_01112018	Nov 01, 2018		Soil	S18-No02008	x					x	x	x
19	SP19_01112018	Nov 01, 2018		Soil	S18-No02009	x					x	x	x
20	SP20_011120	Nov 01, 2018		Soil	S18-No02010	x					x	x	x

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
	18												
21	QC503_01112018	Nov 01, 2018		Water	S18-No02011				X	X			
22	SP02_01112018_F	Nov 01, 2018		Building Materials	S18-No02012			X					
23	SP05_01112018_F	Nov 01, 2018		Building Materials	S18-No02013			X					
24	SP15_01112018_F	Nov 01, 2018		Building Materials	S18-No02014			X					
25	SP17_01112018_F	Nov 01, 2018		Building Materials	S18-No02015			X					
26	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02016		X						
27	TP112_1.6-1.7	Nov 01, 2018		Soil	S18-No02017		X						
28	TP112_1.9-2.0	Nov 01, 2018		Soil	S18-No02018		X						

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
29	TP119_0.9-1.0	Nov 01, 2018		Soil	S18-No02019		X						
30	TP119_1.2-1.3	Nov 01, 2018		Soil	S18-No02020		X						
31	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02021		X						
32	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No02022		X						
33	TP119_2.8-2.9	Nov 01, 2018		Soil	S18-No02023		X						
34	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No02024		X						
35	TP120_0.2-0.3	Nov 01, 2018		Soil	S18-No02025		X						
36	TP120_1.8-1.9	Nov 01, 2018		Soil	S18-No02026		X						
37	QC105_01112 018	Nov 01, 2018		Soil	S18-No02027		X						
38	TP112_0.5-0.6	Nov 01, 2018		Soil	S18-No02028			X					
39	TP119_1.6-1.7	Nov 01, 2018		Soil	S18-No02029			X					

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
40	SB03_0.1-0.2	Nov 01, 2018		Soil	S18-No02030		X						
41	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No02031		X						
42	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No02032		X						
43	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No02033		X						
44	SB03_2.9-3.0	Nov 01, 2018		Soil	S18-No02034		X						
45	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No02035		X						
46	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No02036		X						
47	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No02037		X						
48	SB05_0.9-1.0	Nov 01, 2018		Soil	S18-No02038		X						
49	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No02039		X						
50	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No02040		X						
51	SB05_4.9-5.0	Nov 01, 2018		Soil	S18-No02041		X						

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Sample Detail						Asbestos - AS4964	HOLD	HOLD	Metals M8	BTEX	Eurofins mgt Suite B15	Moisture Set	Eurofins mgt Suite B7
Melbourne Laboratory - NATA Site # 1254 & 14271							X		X	X	X	X	X
Sydney Laboratory - NATA Site # 18217						X		X					
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 23736													
52	QC303_01112 018 (TB)	Nov 01, 2018		Soil	S18-No02042			X					
53	QC403_01112 018 (TS)	Nov 01, 2018		Soil	S18-No02043			X					
54	LAB SPIKE	Nov 01, 2018		Soil	S18-No02044			X					
55	SP19_011120 18_F	Nov 01, 2018		Building Materials	S18-No02051			X					
Test Counts						20	34	34	1	1	20	20	20

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
BTEX									
Benzene			mg/L	< 0.001			0.001	Pass	
Toluene			mg/L	< 0.001			0.001	Pass	
Ethylbenzene			mg/L	< 0.001			0.001	Pass	
m&p-Xylenes			mg/L	< 0.002			0.002	Pass	
o-Xylene			mg/L	< 0.001			0.001	Pass	
Xylenes - Total			mg/L	< 0.003			0.003	Pass	
Method Blank									
Heavy Metals									
Arsenic			mg/L	< 0.001			0.001	Pass	
Cadmium			mg/L	< 0.0002			0.0002	Pass	
Chromium			mg/L	< 0.001			0.001	Pass	
Copper			mg/L	< 0.001			0.001	Pass	
Lead			mg/L	< 0.001			0.001	Pass	
Mercury			mg/L	< 0.0001			0.0001	Pass	
Nickel			mg/L	< 0.001			0.001	Pass	
Zinc			mg/L	< 0.005			0.005	Pass	
LCS - % Recovery									
BTEX									
Benzene			%	102			70-130	Pass	
Toluene			%	96			70-130	Pass	
Ethylbenzene			%	95			70-130	Pass	
m&p-Xylenes			%	92			70-130	Pass	
Xylenes - Total			%	93			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic			%	97			80-120	Pass	
Cadmium			%	102			80-120	Pass	
Chromium			%	100			80-120	Pass	
Copper			%	96			80-120	Pass	
Lead			%	97			80-120	Pass	
Mercury			%	93			75-125	Pass	
Nickel			%	97			80-120	Pass	
Zinc			%	102			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	M18-No00593	NCP	%	106			75-125	Pass	
Cadmium	M18-No00593	NCP	%	108			75-125	Pass	
Chromium	M18-No00593	NCP	%	106			75-125	Pass	
Copper	M18-No00593	NCP	%	103			75-125	Pass	
Lead	M18-No00593	NCP	%	105			75-125	Pass	
Mercury	M18-No00593	NCP	%	103			70-130	Pass	
Nickel	M18-No00593	NCP	%	103			75-125	Pass	
Zinc	M18-No00593	NCP	%	110			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M18-Oc35752	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M18-Oc35752	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M18-Oc35752	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	M18-No00593	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	M18-No00593	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	M18-No00593	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	M18-No00593	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	M18-No00593	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	M18-No00593	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	M18-No00593	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	M18-No00593	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Enviro Sample NSW

To: Alena Bounkeua; COC NSW
Subject: RE: Request for Analysis | Work Order: 625312, 625350 and 625685

From: Alicia Cronly
Sent: Monday, 5 November 2018 4:45:30 PM (UTC+10:00) Canberra, Melbourne, Sydney
To: Nibha Vaidya
Cc: Ian Batterley; Roxanne McKinnon
Subject: Request for Analysis | Work Order: 625312, 625350 and 625685

EXTERNAL EMAIL*

Hi Nibha,

Hope your weekend was nice!

Could I please get the following analyses scheduled for samples under the following work orders for Standard TAT:

625312

- Asbestos (presence absence)
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
 - o SS05_F
 - o TP101_SS
 - o TP102_SS
 - o TP105_SS
 - o TP107_0.6-0.7
- TRH, BTEX, OCC/OCP, PAHs, heavy metals
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP101_0.4-0.5
 - o TP102_1.0-1.1
 - o TP102_1.6-1.7
 - o TP105_0.4-0.5
 - o TP106_0.8-0.9
 - o TP107_0.5-0.6
 - o QC101_0.8-0.9
- PFAS
 - o TP105_0.4-0.5
 - o TP107_0.5-0.6

625350

- Asbestos (presence/absence)
 - o TP115_3.0-3.1
 - o TP115_3.0-3.1_F
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP111_1.8-1.9
 - o TP111_2.1-2.2
 - o TP113_0.2-0.3

- o TP114_1.4-1.5
- o TP114_3.7-3.8
- o TP115_2.4-2.5
- o TP115_3.6-3.7
- o QC103_0.2-0.3
- PFAS
 - o TP111_1.8-1.9
 - o TP113_1.1-1.2
 - o TP114_1.4-1.5
 - o TP115_2.4-2.5
 - o QC104_1.1-1.2

625685

- Asbestos (presence/absence)
 - o SP02_01112018_F
 - o SP05_01112018_F
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
- BTEX
 - o QC303
 - o QC403
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP119_2.4-2.5
 - o TP119_3.7-3.8
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
 - o SB05_1.9-2.0
 - o SB05_2.5-2.6
 - o QC105_01112018
- PFAS
 - o TP119_2.4-2.5
- SPOCAS
 - o SB03_5.5-5.6

Alicia Cronly

Environmental Scientist



Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent St, Sydney NSW 2000

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Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Alicia Cronly**
Project name: **ADDITIONAL - PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Nov 5, 2018 4:45 PM**
Eurofins | mgt reference: **626280**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☐ Split sample sent to requested external lab.
- ☐ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Alicia Cronly - Alicia.Cronly@senversa.com.au.

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

[illegible]

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626280
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence / Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
Perth Laboratory - NATA Site # 23736																
10	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-No07172	X										
11	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-No07173			X	X	X	X	X	X	X	X	
12	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-No07174			X	X	X	X	X	X	X	X	
13	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-No07175			X	X	X	X	X	X	X	X	
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-No07176			X	X	X	X	X	X	X	X	X
15	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-No07177			X	X	X	X	X	X	X	X	
16	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-No07178			X	X	X	X	X	X	X	X	X
17	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-No07179			X	X	X	X	X	X	X	X	
Test Counts						9	1	12	12	12	7	12	12	12	12	2

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025-Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000

Attention: Alicia Cronly
Report 626280-AID
Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018
Date Reported Nov 12, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Date Sampled Oct 30, 2018
Report 626280-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SS01_0.0-0.1	18-No07163	Oct 30, 2018	Approximate Sample 991g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SS02_0.0-0.1	18-No07164	Oct 30, 2018	Approximate Sample 1083g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SS03_0.0-0.1	18-No07165	Oct 30, 2018	Approximate Sample 1041g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SS04_0.0-0.1	18-No07166	Oct 30, 2018	Approximate Sample 930g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SS05_0.0-0.1	18-No07167	Oct 30, 2018	Approximate Sample 821g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SS05_F	18-No07168	Oct 30, 2018	Approximate Sample 79g / 110x80x4mm Sample consisted of: Grey compressed fibre cement sheet	Chrysotile asbestos detected.
TP101_SS	18-No07169	Oct 30, 2018	Approximate Sample 459g Sample consisted of: Dark brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP102_SS	18-No07170	Oct 30, 2018	Approximate Sample 462g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP105_SS	18-No07171	Oct 30, 2018	Approximate Sample 726g Sample consisted of: Grey fine-grained sandy soil	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP107_0.6-0.7	18-No07172	Oct 30, 2018	Approximate Sample 680g Sample consisted of: Brown fine-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Nov 06, 2018	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Nov 06, 2018	Indefinite

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626280
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	SS01_0.0-0.1	Oct 30, 2018		Soil	S18-No07163	X		X	X	X		X	X	X	X	
2	SS02_0.0-0.1	Oct 30, 2018		Soil	S18-No07164	X		X	X	X		X	X	X	X	
3	SS03_0.0-0.1	Oct 30, 2018		Soil	S18-No07165	X		X	X	X		X	X	X	X	
4	SS04_0.0-0.1	Oct 30, 2018		Soil	S18-No07166	X		X	X	X		X	X	X	X	
5	SS05_0.0-0.1	Oct 30, 2018		Soil	S18-No07167	X		X	X	X		X	X	X	X	
6	SS05_F	Oct 30, 2018		Building Materials	S18-No07168		X									
7	TP101_SS	Oct 30, 2018		Soil	S18-No07169	X										
8	TP102_SS	Oct 30, 2018		Soil	S18-No07170	X										
9	TP105_SS	Oct 30, 2018		Soil	S18-No07171	X										

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626280
Phone: 02 9994 8016
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Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
Perth Laboratory - NATA Site # 23736																
10	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-No07172	X										
11	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-No07173			X	X	X	X	X	X	X	X	
12	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-No07174			X	X	X	X	X	X	X	X	
13	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-No07175			X	X	X	X	X	X	X	X	
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-No07176			X	X	X	X	X	X	X	X	X
15	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-No07177			X	X	X	X	X	X	X	X	
16	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-No07178			X	X	X	X	X	X	X	X	X
17	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-No07179			X	X	X	X	X	X	X	X	
Test Counts						9	1	12	12	12	7	12	12	12	12	2

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayeed Abu Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias Senior Analyst-Asbestos (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 626280-S
Project name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018

Client Sample ID			SS01_0.0-0.1	SS02_0.0-0.1	SS03_0.0-0.1	SS04_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07163	S18-No07164	S18-No07165	S18-No07166
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	53	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	53	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	57	66	69	65
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SS01_0.0-0.1	SS02_0.0-0.1	SS03_0.0-0.1	SS04_0.0-0.1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07163	S18-No07164	S18-No07165	S18-No07166
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	89	92	103	99
p-Terphenyl-d14 (surr.)	1	%	90	95	107	102
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	89	87	91	95
Tetrachloro-m-xylene (surr.)	1	%	88	85	85	91
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	SS01_0.0-0.1 Soil S18-No07163 Oct 30, 2018	SS02_0.0-0.1 Soil S18-No07164 Oct 30, 2018	SS03_0.0-0.1 Soil S18-No07165 Oct 30, 2018	SS04_0.0-0.1 Soil S18-No07166 Oct 30, 2018
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	84	94	92	107
Heavy Metals						
Arsenic	2	mg/kg	2.8	4.2	< 2	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	16	32	6.3
Copper	5	mg/kg	23	11	48	8.8
Lead	5	mg/kg	13	31	< 5	17
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	11	< 5	170	16
Zinc	5	mg/kg	51	38	86	27
% Moisture	1	%	5.0	7.6	5.4	6.5

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	SS05_0.0-0.1 Soil S18-No07167 Oct 30, 2018	TP101_0.4-0.5 Soil S18-No07173 Oct 30, 2018	TP102_1.0-1.1 Soil S18-No07174 Oct 30, 2018	TP102_1.6-1.7 Soil S18-No07175 Oct 30, 2018
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	39	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	85	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	124	< 50

Client Sample ID			SS05_0.0-0.1 Soil	TP101_0.4-0.5 Soil	TP102_1.0-1.1 Soil	TP102_1.6-1.7 Soil
Sample Matrix			S18-No07167	S18-No07173	S18-No07174	S18-No07175
Eurofins mgt Sample No.			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Date Sampled						
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	0.5	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	0.4	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	0.9	< 0.3
4-Bromofluorobenzene (surr.)	1	%	68	63	74	65
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	51	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	51	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	105	106	91	102
p-Terphenyl-d14 (surr.)	1	%	109	114	100	106
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			SS05_0.0-0.1	TP101_0.4-0.5	TP102_1.0-1.1	TP102_1.6-1.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07167	S18-No07173	S18-No07174	S18-No07175
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	111	104	118	116
Tetrachloro-m-xylene (surr.)	1	%	101	96	108	108
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SS05_0.0-0.1	TP101_0.4-0.5	TP102_1.0-1.1	TP102_1.6-1.7
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07167	S18-No07173	S18-No07174	S18-No07175
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	111	109	96	110
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	-	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	-	104	118	116
Tetrachloro-m-xylene (surr.)	1	%	-	96	108	108
Heavy Metals						
Arsenic	2	mg/kg	3.0	10	5.0	2.2
Cadmium	0.4	mg/kg	< 0.4	0.5	< 0.4	< 0.4
Chromium	5	mg/kg	10	16	9.8	6.4
Copper	5	mg/kg	6.2	790	110	39
Lead	5	mg/kg	12	130	36	12
Mercury	0.1	mg/kg	< 0.1	1.0	0.4	< 0.1
Nickel	5	mg/kg	< 5	74	39	< 5
Zinc	5	mg/kg	16	190	11	9.5
% Moisture	1	%	10.0	21	25	16

Client Sample ID			TP105_0.4-0.5	TP106_0.8-0.9	TP107_0.5-0.6	QC101_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07176	S18-No07177	S18-No07178	S18-No07179
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	100	< 50
TRH C29-C36	50	mg/kg	< 50	59	75	63
TRH C10-36 (Total)	50	mg/kg	< 50	59	175	63
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	65	68	66	68

Client Sample ID			TP105_0.4-0.5	TP106_0.8-0.9	TP107_0.5-0.6	QC101_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07176	S18-No07177	S18-No07178	S18-No07179
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	160	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	160	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	1.4	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	1.7	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	2.0	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	0.9	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	1.1	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	1.3	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	1.0	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	2.0	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	0.6	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	2.2	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	10.1	< 0.5
2-Fluorobiphenyl (surr.)	1	%	95	92	99	94
p-Terphenyl-d14 (surr.)	1	%	102	101	99	100
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
α-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
β-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
δ-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
γ-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			TP105_0.4-0.5	TP106_0.8-0.9	TP107_0.5-0.6	QC101_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07176	S18-No07177	S18-No07178	S18-No07179
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	113	104	100	99
Tetrachloro-m-xylene (surr.)	1	%	104	95	90	92
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	102	97	99	99

Client Sample ID			TP105_0.4-0.5	TP106_0.8-0.9	TP107_0.5-0.6	QC101_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07176	S18-No07177	S18-No07178	S18-No07179
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchloredate (surr.)	1	%	113	104	100	99
Tetrachloro-m-xylene (surr.)	1	%	104	95	90	92
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorotridecanoic acid (PFTrDA) ^{N15}	5	ug/kg	< 5	-	< 5	-
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5	-	< 5	-
13C4-PFBA (surr.)	1	%	151	-	138	-
13C5-PFPeA (surr.)	1	%	129	-	123	-
13C5-PFHxA (surr.)	1	%	142	-	132	-
13C4-PFHpA (surr.)	1	%	128	-	124	-
13C8-PFOA (surr.)	1	%	148	-	136	-
13C5-PFNA (surr.)	1	%	128	-	120	-
13C6-PFDA (surr.)	1	%	144	-	132	-
13C2-PFUnDA (surr.)	1	%	145	-	134	-
13C2-PFDoDA (surr.)	1	%	137	-	129	-
13C2-PFTeDA (surr.)	1	%	138	-	130	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5	-	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5	-	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5	-	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	< 5	-	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	< 5	-	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10	-	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10	-	< 10	-
13C8-FOSA (surr.)	1	%	106	-	102	-
D3-N-MeFOSA (surr.)	1	%	123	-	124	-
D5-N-EtFOSA (surr.)	1	%	156	-	151	-
D7-N-MeFOSE (surr.)	1	%	113	-	99	-
D9-N-EtFOSE (surr.)	1	%	122	-	117	-
D5-N-EtFOSAA (surr.)	1	%	145	-	135	-
D3-N-MeFOSAA (surr.)	1	%	87	-	77	-

Client Sample ID			TP105_0.4-0.5	TP106_0.8-0.9	TP107_0.5-0.6	QC101_0.8-0.9
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No07176	S18-No07177	S18-No07178	S18-No07179
Date Sampled			Oct 30, 2018	Oct 30, 2018	Oct 30, 2018	Oct 30, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5	-	< 5	-
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5	-	< 5	-
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5	-	< 5	-
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5	-	< 5	-
13C3-PFBS (surr.)	1	%	139	-	120	-
18O2-PFHxS (surr.)	1	%	130	-	123	-
13C8-PFOS (surr.)	1	%	131	-	132	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	< 10	-	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5	-	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	< 5	-	< 5	-
13C2-4:2 FTSA (surr.)	1	%	131	-	119	-
13C2-6:2 FTSA (surr.)	1	%	126	-	127	-
13C2-8:2 FTSA (surr.)	1	%	93	-	104	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	< 10	-
Sum of PFASs (n=28)*	50	ug/kg	< 50	-	< 50	-
Heavy Metals						
Arsenic	2	mg/kg	2.7	< 2	2.2	2.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.5	22	7.8	21
Copper	5	mg/kg	19	29	24	28
Lead	5	mg/kg	25	16	83	23
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	22	61	9.0	46
Zinc	5	mg/kg	41	72	110	63
% Moisture	1	%	11	12	10	16

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
BTEX - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Sydney	Nov 08, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Nov 08, 2018	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 08, 2018	14 Day
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Nov 08, 2018	14 Day
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 08, 2018	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Nov 08, 2018	28 Day
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Sydney	Nov 06, 2018	14 Day

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626280
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence / Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoralkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
Perth Laboratory - NATA Site # 23736																
External Laboratory																
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID											
1	SS01_0.0-0.1	Oct 30, 2018		Soil	S18-No07163	X		X	X	X		X	X	X	X	
2	SS02_0.0-0.1	Oct 30, 2018		Soil	S18-No07164	X		X	X	X		X	X	X	X	
3	SS03_0.0-0.1	Oct 30, 2018		Soil	S18-No07165	X		X	X	X		X	X	X	X	
4	SS04_0.0-0.1	Oct 30, 2018		Soil	S18-No07166	X		X	X	X		X	X	X	X	
5	SS05_0.0-0.1	Oct 30, 2018		Soil	S18-No07167	X		X	X	X		X	X	X	X	
6	SS05_F	Oct 30, 2018		Building Materials	S18-No07168		X									
7	TP101_SS	Oct 30, 2018		Soil	S18-No07169	X										
8	TP102_SS	Oct 30, 2018		Soil	S18-No07170	X										
9	TP105_SS	Oct 30, 2018		Soil	S18-No07171	X										

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626280
Phone: 02 9994 8016
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Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoralkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794																X
Perth Laboratory - NATA Site # 23736																
10	TP107_0.6-0.7	Oct 30, 2018		Soil	S18-No07172	X										
11	TP101_0.4-0.5	Oct 30, 2018		Soil	S18-No07173			X	X	X	X	X	X	X	X	
12	TP102_1.0-1.1	Oct 30, 2018		Soil	S18-No07174			X	X	X	X	X	X	X	X	
13	TP102_1.6-1.7	Oct 30, 2018		Soil	S18-No07175			X	X	X	X	X	X	X	X	
14	TP105_0.4-0.5	Oct 30, 2018		Soil	S18-No07176			X	X	X	X	X	X	X	X	X
15	TP106_0.8-0.9	Oct 30, 2018		Soil	S18-No07177			X	X	X	X	X	X	X	X	
16	TP107_0.5-0.6	Oct 30, 2018		Soil	S18-No07178			X	X	X	X	X	X	X	X	X
17	QC101_0.8-0.9	Oct 30, 2018		Soil	S18-No07179			X	X	X	X	X	X	X	X	
Test Counts						9	1	12	12	12	7	12	12	12	12	2

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	95			70-130	Pass	
TRH C10-C14	%	112			70-130	Pass	
LCS - % Recovery							
BTEX							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	%	92			70-130	Pass	
Toluene	%	100			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	106			70-130	Pass	
o-Xylene	%	104			70-130	Pass	
Xylenes - Total	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	112			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
TRH >C10-C16	%	116			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	83			70-130	Pass	
Benz(a)anthracene	%	78			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	86			70-130	Pass	
Benzo(g,h,i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	88			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a,h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	86			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	87			70-130	Pass	
Naphthalene	%	94			70-130	Pass	
Phenanthrene	%	85			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	97			70-130	Pass	
4,4'-DDE	%	94			70-130	Pass	
4,4'-DDT	%	90			70-130	Pass	
α-BHC	%	102			70-130	Pass	
Aldrin	%	103			70-130	Pass	
β-BHC	%	95			70-130	Pass	
δ-BHC	%	103			70-130	Pass	
Dieldrin	%	96			70-130	Pass	
Endosulfan I	%	104			70-130	Pass	
Endosulfan II	%	100			70-130	Pass	
Endosulfan sulphate	%	98			70-130	Pass	
Endrin	%	102			70-130	Pass	
Endrin aldehyde	%	89			70-130	Pass	
Endrin ketone	%	105			70-130	Pass	
γ-BHC (Lindane)	%	102			70-130	Pass	
Heptachlor	%	100			70-130	Pass	
Heptachlor epoxide	%	104			70-130	Pass	
Hexachlorobenzene	%	89			70-130	Pass	
Methoxychlor	%	95			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	95			70-130	Pass	
Dimethoate	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethion	%	79			70-130	Pass	
Fenitrothion	%	122			70-130	Pass	
Mevinphos	%	98			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	80			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	92			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	87			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	89			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	87			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	102			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	87			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	102			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	84			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	86			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	97			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	76			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	70			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	147			50-150	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	88			70-130	Pass	
Cadmium	%	108			70-130	Pass	
Chromium	%	100			70-130	Pass	
Copper	%	104			70-130	Pass	
Lead	%	121			70-130	Pass	
Mercury	%	129			70-130	Pass	
Nickel	%	126			70-130	Pass	
Zinc	%	117			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-No05260	NCP	%	81			70-130	Pass	
TRH C10-C14	S18-No09367	NCP	%	124			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-No05260	NCP	%	75			70-130	Pass	
Ethylbenzene	S18-No05260	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH C6-C10	S18-No05260	NCP	%	79			70-130	Pass	
TRH >C10-C16	S18-No07295	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-No09367	NCP	%	73			70-130	Pass	
Acenaphthylene	S18-No09367	NCP	%	79			70-130	Pass	
Anthracene	S18-No09367	NCP	%	76			70-130	Pass	
Benz(a)anthracene	S18-No09367	NCP	%	76			70-130	Pass	
Benzo(a)pyrene	S18-No09367	NCP	%	75			70-130	Pass	
Benzo(b&j)fluoranthene	S18-No09367	NCP	%	78			70-130	Pass	
Benzo(g,h,i)perylene	S18-No09367	NCP	%	98			70-130	Pass	
Benzo(k)fluoranthene	S18-No09367	NCP	%	77			70-130	Pass	
Chrysene	S18-No09367	NCP	%	81			70-130	Pass	
Dibenz(a,h)anthracene	S18-No09367	NCP	%	87			70-130	Pass	
Fluoranthene	S18-No09367	NCP	%	82			70-130	Pass	
Fluorene	S18-No09367	NCP	%	79			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-No09367	NCP	%	84			70-130	Pass	
Naphthalene	S18-No09367	NCP	%	84			70-130	Pass	
Phenanthrene	S18-No09367	NCP	%	77			70-130	Pass	
Pyrene	S18-No09367	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	S18-No07163	CP	%	125			70-130	Pass	
4,4'-DDE	S18-No07163	CP	%	95			70-130	Pass	
4,4'-DDT	S18-No10466	NCP	%	108			70-130	Pass	
α-BHC	S18-No07163	CP	%	97			70-130	Pass	
Aldrin	S18-No07163	CP	%	99			70-130	Pass	
β-BHC	S18-No07163	CP	%	92			70-130	Pass	
δ-BHC	S18-No07163	CP	%	101			70-130	Pass	
Dieldrin	S18-No07163	CP	%	99			70-130	Pass	
Endosulfan I	S18-No07163	CP	%	99			70-130	Pass	
Endosulfan II	S18-No07163	CP	%	99			70-130	Pass	
Endosulfan sulphate	S18-No07163	CP	%	100			70-130	Pass	
Endrin	S18-No07163	CP	%	101			70-130	Pass	
Endrin aldehyde	S18-No07163	CP	%	80			70-130	Pass	
Endrin ketone	S18-No07163	CP	%	93			70-130	Pass	
γ-BHC (Lindane)	S18-No07163	CP	%	96			70-130	Pass	
Heptachlor	S18-No07163	CP	%	88			70-130	Pass	
Heptachlor epoxide	S18-No07163	CP	%	99			70-130	Pass	
Hexachlorobenzene	S18-No07163	CP	%	85			70-130	Pass	
Methoxychlor	S18-No10466	NCP	%	123			70-130	Pass	
Toxaphene	S18-No07163	CP	%	86			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Diazinon	S18-No09367	NCP	%	88			70-130	Pass	
Dimethoate	S18-No09367	NCP	%	79			70-130	Pass	
Ethion	S18-No07295	NCP	%	94			70-130	Pass	
Fenitrothion	S18-No09367	NCP	%	118			70-130	Pass	
Methyl parathion	S18-No07295	NCP	%	84			70-130	Pass	
Mevinphos	S18-No09367	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-No02665	NCP	%	75			70-130	Pass	
Cadmium	S18-No02665	NCP	%	103			70-130	Pass	
Chromium	S18-No02665	NCP	%	105			70-130	Pass	
Copper	S18-No02665	NCP	%	109			70-130	Pass	
Lead	S18-No02665	NCP	%	106			70-130	Pass	
Mercury	S18-No02665	NCP	%	111			70-130	Pass	
Nickel	S18-No02665	NCP	%	112			70-130	Pass	
Zinc	S18-No02665	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S18-No10466	NCP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Toluene	S18-No07174	CP	%	72			70-130	Pass	
m&p-Xylenes	S18-No07174	CP	%	75			70-130	Pass	
o-Xylene	S18-No07174	CP	%	73			70-130	Pass	
Xylenes - Total	S18-No07174	CP	%	74			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-No07174	CP	%	79			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S18-No08785	NCP	%	95			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S18-No08785	NCP	%	108			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S18-No08785	NCP	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S18-No08785	NCP	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S18-No08785	NCP	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	S18-No08785	NCP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S18-No08785	NCP	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S18-No08785	NCP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S18-No08785	NCP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTriDA)	S18-No08785	NCP	%	81			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S18-No08785	NCP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S18-No08785	NCP	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No08785	NCP	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No08785	NCP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No08785	NCP	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No08785	NCP	%	81			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No08785	NCP	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No08785	NCP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFASs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S18-No08785	NCP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S18-No08785	NCP	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S18-No08785	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S18-No08785	NCP	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S18-No08785	NCP	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S18-No08785	NCP	%	84			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No08785	NCP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No08785	NCP	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No08785	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No08785	NCP	%	134			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S18-No03690	NCP	mg/kg	21	26	22	30%	Pass	
TRH C15-C28	S18-No03690	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S18-No03690	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S18-No03690	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S18-No03690	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S18-No03690	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Naphthalene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-No03690	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No05313	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No05313	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No05313	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No05313	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-No11885	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S18-No11885	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-No05610	NCP	mg/kg	5.7	5.5	4.0	30%	Pass
Copper	S18-No11885	NCP	mg/kg	20	22	9.0	30%	Pass
Lead	S18-No05610	NCP	mg/kg	120	120	4.0	30%	Pass
Mercury	S18-No11885	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-No05610	NCP	mg/kg	6.6	6.8	3.0	30%	Pass
Zinc	S18-No05610	NCP	mg/kg	77	81	5.0	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-No07173	CP	mg/kg	< 20	< 20	<1	30%	Pass

Duplicate								
BTX				Result 1	Result 2	RPD		
Benzene	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-No07173	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-No07173	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-No07173	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No07173	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No07173	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S18-No07173	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1221	S18-No07173	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S18-No07173	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-No07174	CP	%	25	24	1.0	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorodecanoic acid (PFDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Nibha Vaidya	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Jonathon Angell	Senior Analyst-Organic (QLD)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Enviro Sample NSW

To: Alena Bounkeua; COC NSW
Subject: RE: Request for Analysis | Work Order: 625312, 625350 and 625685

From: Alicia Cronly
Sent: Monday, 5 November 2018 4:45:30 PM (UTC+10:00) Canberra, Melbourne, Sydney
To: Nibha Vaidya
Cc: Ian Batterley; Roxanne McKinnon
Subject: Request for Analysis | Work Order: 625312, 625350 and 625685

EXTERNAL EMAIL*

Hi Nibha,

Hope your weekend was nice!

Could I please get the following analyses scheduled for samples under the following work orders for Standard TAT:

625312

- Asbestos (presence absence)
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
 - o SS05_F
 - o TP101_SS
 - o TP102_SS
 - o TP105_SS
 - o TP107_0.6-0.7
- TRH, BTEX, OCC/OCP, PAHs, heavy metals
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP101_0.4-0.5
 - o TP102_1.0-1.1
 - o TP102_1.6-1.7
 - o TP105_0.4-0.5
 - o TP106_0.8-0.9
 - o TP107_0.5-0.6
 - o QC101_0.8-0.9
- PFAS
 - o TP105_0.4-0.5
 - o TP107_0.5-0.6

625350

- Asbestos (presence/absence)
 - o TP115_3.0-3.1
 - o TP115_3.0-3.1_F
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP111_1.8-1.9
 - o TP111_2.1-2.2
 - o TP113_0.2-0.3

- o TP114_1.4-1.5
- o TP114_3.7-3.8
- o TP115_2.4-2.5
- o TP115_3.6-3.7
- o QC103_0.2-0.3
- PFAS
 - o TP111_1.8-1.9
 - o TP113_1.1-1.2
 - o TP114_1.4-1.5
 - o TP115_2.4-2.5
 - o QC104_1.1-1.2

625685

- Asbestos (presence/absence)
 - o SP02_01112018_F
 - o SP05_01112018_F
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
- BTEX
 - o QC303
 - o QC403
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP119_2.4-2.5
 - o TP119_3.7-3.8
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
 - o SB05_1.9-2.0
 - o SB05_2.5-2.6
 - o QC105_01112018
- PFAS
 - o TP119_2.4-2.5
- SPOCAS
 - o SB03_5.5-5.6

Alicia Cronly

Environmental Scientist



Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent St, Sydney NSW 2000

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Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Alicia Cronly**
Project name: **ADDITIONAL - PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Nov 5, 2018 4:45 PM**
Eurofins | mgt reference: **626298**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☐ Split sample sent to requested external lab.
- ☐ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

PFAS tub not received for TP113_1.0-1.1 - analysis cancelled

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Alicia Cronly - Alicia.Cronly@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626298
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
1	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-No08783	X												
2	TP115_3.0-3.1 F	Oct 31, 2018		Building Materials	S18-No08784		X											
3	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-No08785				X	X	X	X	X	X		X	X	X
4	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-No08786				X	X	X	X	X	X		X	X	
5	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-No08787				X	X	X	X	X	X		X	X	
6	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-No08788				X	X	X	X	X	X		X	X	X
7	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-No08789				X	X	X	X	X	X		X	X	
8	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-No08790				X	X	X	X	X	X		X	X	X
9	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-No08791				X	X	X	X	X	X		X	X	

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
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Phone: 02 9994 8016
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Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
10	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-No08792				X	X	X	X	X	X		X	X	
11	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-No08793			X										
12	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-No08794										X			X
Test Counts						1	1	1	8	8	8	8	8	8	9	9	8	4

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025—Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000

Attention: Alicia Cronly
Report 626298-AID
Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018
Date Reported Nov 12, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Date Sampled Oct 31, 2018
Report 626298-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
TP115_3.0-3.1	18-No08783	Oct 31, 2018	Approximate Sample 563g Sample consisted of: Grey coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
TP115_3.0-3.1_F	18-No08784	Oct 31, 2018	Approximate Sample 46g / 90x50x5mm Sample consisted of: Grey compressed fibre cement sheet	Chrysotile asbestos detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Nov 06, 2018	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Nov 06, 2018	Indefinite

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626298
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence / Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
1	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-No08783	X												
2	TP115_3.0-3.1 F	Oct 31, 2018		Building Materials	S18-No08784		X											
3	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-No08785				X	X	X	X	X	X		X	X	X
4	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-No08786				X	X	X	X	X	X		X	X	
5	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-No08787				X	X	X	X	X	X		X	X	
6	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-No08788				X	X	X	X	X	X		X	X	X
7	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-No08789				X	X	X	X	X	X		X	X	
8	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-No08790				X	X	X	X	X	X		X	X	X
9	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-No08791				X	X	X	X	X	X		X	X	

Company Name: Senversa Pty Ltd NSW
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Sample Detail						Asbestos - AS4964	Asbestos Absence / Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
10	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-No08792				X	X	X	X	X	X		X	X	
11	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-No08793			X										
12	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-No08794										X			X
Test Counts						1	1	1	8	8	8	8	8	8	9	9	8	4

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Sayeed Abu Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias Senior Analyst-Asbestos (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 626298-S
Project name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018

Client Sample ID			TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	TP114_1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08785	S18-No08786	S18-No08787	S18-No08788
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	20
TRH C15-C28	50	mg/kg	120	< 50	< 50	110
TRH C29-C36	50	mg/kg	96	< 50	< 50	64
TRH C10-36 (Total)	50	mg/kg	216	< 50	< 50	194
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	62	76	75	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	180	< 100	< 100	150
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	180	< 100	< 100	150
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	TP114_1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08785	S18-No08786	S18-No08787	S18-No08788
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	96	91	93	95
p-Terphenyl-d14 (surr.)	1	%	101	99	100	101
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	95	85	90	88
Tetrachloro-m-xylene (surr.)	1	%	99	102	108	98
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	TP114_1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08785	S18-No08786	S18-No08787	S18-No08788
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	102	93	96	98
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	95	85	90	88
Tetrachloro-m-xylene (surr.)	1	%	99	102	108	98
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorotridecanoic acid (PFTTrDA) ^{N15}	5	ug/kg	< 5	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5	-	-	< 5
13C4-PFBA (surr.)	1	%	142	-	-	136

Client Sample ID			TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	TP114_1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08785	S18-No08786	S18-No08787	S18-No08788
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
13C5-PFPeA (surr.)	1	%	124	-	-	105
13C5-PFHxA (surr.)	1	%	134	-	-	126
13C4-PFHpA (surr.)	1	%	125	-	-	123
13C8-PFOA (surr.)	1	%	135	-	-	132
13C5-PFNA (surr.)	1	%	124	-	-	129
13C6-PFDA (surr.)	1	%	129	-	-	134
13C2-PFUnDA (surr.)	1	%	124	-	-	124
13C2-PFDoDA (surr.)	1	%	127	-	-	128
13C2-PFTeDA (surr.)	1	%	144	-	-	143
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	< 5	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	< 5	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10	-	-	< 10
13C8-FOSA (surr.)	1	%	106	-	-	98
D3-N-MeFOSA (surr.)	1	%	128	-	-	118
D5-N-EtFOSA (surr.)	1	%	138	-	-	142
D7-N-MeFOSE (surr.)	1	%	113	-	-	98
D9-N-EtFOSE (surr.)	1	%	121	-	-	115
D5-N-EtFOSAA (surr.)	1	%	135	-	-	140
D3-N-MeFOSAA (surr.)	1	%	74	-	-	75
Perfluoroalkyl sulfonic acids (PFSA)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5	-	-	< 5
13C3-PFBS (surr.)	1	%	139	-	-	121
18O2-PFHxS (surr.)	1	%	123	-	-	117
13C8-PFOS (surr.)	1	%	110	-	-	122
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	< 10	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	< 5	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	139	-	-	139
13C2-6:2 FTSA (surr.)	1	%	144	-	-	171
13C2-8:2 FTSA (surr.)	1	%	110	-	-	137

Client Sample ID			TP111_1.8-1.9	TP111_2.1-2.2	TP113_0.2-0.3	TP114_1.4-1.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08785	S18-No08786	S18-No08787	S18-No08788
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	-	< 10
Sum of PFASs (n=28)*	50	ug/kg	< 50	-	-	< 50
Heavy Metals						
Arsenic	2	mg/kg	10	5.9	8.7	5.5
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	22	12	14	17
Copper	5	mg/kg	560	< 5	6.9	260
Lead	5	mg/kg	410	32	58	190
Mercury	0.1	mg/kg	0.7	< 0.1	< 0.1	0.7
Nickel	5	mg/kg	45	< 5	< 5	52
Zinc	5	mg/kg	310	22	72	110
% Moisture	1	%	20	11	17	18

Client Sample ID			TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.6-3.7	QC103_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08789	S18-No08790	S18-No08791	S18-No08792
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	190	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	120	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	310	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	63	87	73	86
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	270	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	270	< 100	< 100

Client Sample ID			TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.6-3.7	QC103_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08789	S18-No08790	S18-No08791	S18-No08792
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	95	94	100	93
p-Terphenyl-d14 (surr.)	1	%	102	98	106	99
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	98	113	131	118
Tetrachloro-m-xylene (surr.)	1	%	108	99	112	106

Client Sample ID			TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.6-3.7	QC103_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08789	S18-No08790	S18-No08791	S18-No08792
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	94	101	100	97
Polychlorinated Biphenyls						
Aroclor-1016	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1242	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1248	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1254	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Aroclor-1260	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PCB*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibutylchlorendate (surr.)	1	%	98	113	131	118
Tetrachloro-m-xylene (surr.)	1	%	108	99	112	106

Client Sample ID			TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.6-3.7	QC103_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08789	S18-No08790	S18-No08791	S18-No08792
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorotridecanoic acid (PFTrDA) ^{N15}	5	ug/kg	-	< 5	-	-
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	-	< 5	-	-
13C4-PFBA (surr.)	1	%	-	120	-	-
13C5-PFPeA (surr.)	1	%	-	128	-	-
13C5-PFHxA (surr.)	1	%	-	125	-	-
13C4-PFHpA (surr.)	1	%	-	112	-	-
13C8-PFOA (surr.)	1	%	-	130	-	-
13C5-PFNA (surr.)	1	%	-	115	-	-
13C6-PFDA (surr.)	1	%	-	121	-	-
13C2-PFUnDA (surr.)	1	%	-	122	-	-
13C2-PFDoDA (surr.)	1	%	-	126	-	-
13C2-PFTeDA (surr.)	1	%	-	132	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	-	< 5	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	-	< 5	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	-	< 5	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	-	< 5	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	-	< 5	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	-	< 10	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	-	< 10	-	-
13C8-FOSA (surr.)	1	%	-	99	-	-
D3-N-MeFOSA (surr.)	1	%	-	117	-	-
D5-N-EtFOSA (surr.)	1	%	-	140	-	-
D7-N-MeFOSE (surr.)	1	%	-	100	-	-
D9-N-EtFOSE (surr.)	1	%	-	113	-	-
D5-N-EtFOSAA (surr.)	1	%	-	118	-	-
D3-N-MeFOSAA (surr.)	1	%	-	70	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	-	< 5	-	-
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	-	< 5	-	-
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	-	< 5	-	-
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	-	< 5	-	-
13C3-PFBS (surr.)	1	%	-	121	-	-
18O2-PFHxS (surr.)	1	%	-	106	-	-
13C8-PFOS (surr.)	1	%	-	115	-	-

Client Sample ID			TP114_3.7-3.8	TP115_2.4-2.5	TP115_3.6-3.7	QC103_0.2-0.3
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08789	S18-No08790	S18-No08791	S18-No08792
Date Sampled			Oct 31, 2018	Oct 31, 2018	Oct 31, 2018	Oct 31, 2018
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	-	< 10	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	-	< 5	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	-	< 5	-	-
13C2-4:2 FTSA (surr.)	1	%	-	128	-	-
13C2-6:2 FTSA (surr.)	1	%	-	132	-	-
13C2-8:2 FTSA (surr.)	1	%	-	116	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	< 5	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	< 5	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	< 10	-	-
Sum of PFASs (n=28)*	50	ug/kg	-	< 50	-	-
Heavy Metals						
Arsenic	2	mg/kg	23	3.3	3.9	5.0
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	42	18	6.3	12
Copper	5	mg/kg	53	140	30	19
Lead	5	mg/kg	54	150	31	45
Mercury	0.1	mg/kg	< 0.1	0.2	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	36	< 5	< 5
Zinc	5	mg/kg	25	170	14	38
% Moisture	1	%	27	19	27	13

Client Sample ID			QC104_1.1-1.2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-No08794
Date Sampled			Oct 31, 2018
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	< 5
Perfluorotridecanoic acid (PFTrDA) ^{N15}	5	ug/kg	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	< 5
13C4-PFBA (surr.)	1	%	127
13C5-PFPeA (surr.)	1	%	109
13C5-PFHxA (surr.)	1	%	123

Client Sample ID			QC104_1.1-1.2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-No08794
Date Sampled			Oct 31, 2018
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
13C4-PFHpA (surr.)	1	%	117
13C8-PFOA (surr.)	1	%	135
13C5-PFNA (surr.)	1	%	116
13C6-PFDA (surr.)	1	%	134
13C2-PFUnDA (surr.)	1	%	132
13C2-PFDoDA (surr.)	1	%	129
13C2-PFTEdA (surr.)	1	%	130
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	< 10
13C8-FOSA (surr.)	1	%	94
D3-N-MeFOSA (surr.)	1	%	121
D5-N-EtFOSA (surr.)	1	%	149
D7-N-MeFOSE (surr.)	1	%	106
D9-N-EtFOSE (surr.)	1	%	121
D5-N-EtFOSAA (surr.)	1	%	141
D3-N-MeFOSAA (surr.)	1	%	82
Perfluoroalkyl sulfonic acids (PFSA)			
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	< 5
13C3-PFBS (surr.)	1	%	118
18O2-PFHxS (surr.)	1	%	113
13C8-PFOS (surr.)	1	%	112
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	< 5
13C2-4:2 FTSA (surr.)	1	%	144
13C2-6:2 FTSA (surr.)	1	%	136
13C2-8:2 FTSA (surr.)	1	%	121

Client Sample ID			QC104_1.1-1.2
Sample Matrix			Soil
Eurofins mgt Sample No.			S18-No08794
Date Sampled			Oct 31, 2018
Test/Reference	LOR	Unit	
PFASs Summations			
Sum (PFHxS + PFOS)*	5	ug/kg	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10
Sum of PFASs (n=28)*	50	ug/kg	< 50
% Moisture	1	%	11

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Sydney	Nov 08, 2018	14 Day
BTEX - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Sydney	Nov 08, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Sydney	Nov 08, 2018	14 Days
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 08, 2018	14 Day
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Sydney	Nov 08, 2018	14 Day
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Sydney	Nov 08, 2018	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Sydney	Nov 08, 2018	28 Day
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
% Moisture - Method: LTM-GEN-7080 Moisture	Brisbane	Nov 06, 2018	14 Day

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626298
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
External Laboratory																		
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID													
1	TP115_3.0-3.1	Oct 31, 2018		Soil	S18-No08783	X												
2	TP115_3.0-3.1 F	Oct 31, 2018		Building Materials	S18-No08784		X											
3	TP111_1.8-1.9	Oct 31, 2018		Soil	S18-No08785				X	X	X	X	X	X		X	X	X
4	TP111_2.1-2.2	Oct 31, 2018		Soil	S18-No08786				X	X	X	X	X	X		X	X	
5	TP113_0.2-0.3	Oct 31, 2018		Soil	S18-No08787				X	X	X	X	X	X		X	X	
6	TP114_1.4-1.5	Oct 31, 2018		Soil	S18-No08788				X	X	X	X	X	X		X	X	X
7	TP114_3.7-3.8	Oct 31, 2018		Soil	S18-No08789				X	X	X	X	X	X		X	X	
8	TP115_2.4-2.5	Oct 31, 2018		Soil	S18-No08790				X	X	X	X	X	X		X	X	X
9	TP115_3.6-3.7	Oct 31, 2018		Soil	S18-No08791				X	X	X	X	X	X		X	X	

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Melbourne Laboratory - NATA Site # 1254 & 14271																		
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X	X	X	X	X	
Brisbane Laboratory - NATA Site # 20794															X	X		X
Perth Laboratory - NATA Site # 23736																		
10	QC103_0.2-0.3	Oct 31, 2018		Soil	S18-No08792				X	X	X	X	X	X		X	X	
11	TP113_1.0-1.1	Oct 31, 2018		Soil	S18-No08793			X										
12	QC104_1.1-1.2	Oct 31, 2018		Soil	S18-No08794										X			X
Test Counts						1	1	1	8	8	8	8	8	8	9	9	8	4

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.2			0.2	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.5			0.5	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.5			0.5	Pass	
Aroclor-1242	mg/kg	< 0.5			0.5	Pass	
Aroclor-1248	mg/kg	< 0.5			0.5	Pass	
Aroclor-1254	mg/kg	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.5			0.5	Pass	
Total PCB*	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	123			70-130	Pass	
LCS - % Recovery							
BTEX							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	%	102			70-130	Pass	
Toluene	%	106			70-130	Pass	
Ethylbenzene	%	112			70-130	Pass	
m&p-Xylenes	%	117			70-130	Pass	
o-Xylene	%	113			70-130	Pass	
Xylenes - Total	%	116			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	125			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
TRH >C10-C16	%	129			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	84			70-130	Pass	
Anthracene	%	97			70-130	Pass	
Benz(a)anthracene	%	84			70-130	Pass	
Benzo(a)pyrene	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	%	76			70-130	Pass	
Benzo(g,h,i)perylene	%	97			70-130	Pass	
Benzo(k)fluoranthene	%	84			70-130	Pass	
Chrysene	%	88			70-130	Pass	
Dibenz(a,h)anthracene	%	97			70-130	Pass	
Fluoranthene	%	83			70-130	Pass	
Fluorene	%	93			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	97			70-130	Pass	
Naphthalene	%	86			70-130	Pass	
Phenanthrene	%	97			70-130	Pass	
Pyrene	%	82			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	104			70-130	Pass	
4,4'-DDE	%	99			70-130	Pass	
4,4'-DDT	%	93			70-130	Pass	
α-BHC	%	109			70-130	Pass	
Aldrin	%	112			70-130	Pass	
β-BHC	%	100			70-130	Pass	
δ-BHC	%	111			70-130	Pass	
Dieldrin	%	103			70-130	Pass	
Endosulfan I	%	109			70-130	Pass	
Endosulfan II	%	107			70-130	Pass	
Endosulfan sulphate	%	106			70-130	Pass	
Endrin	%	104			70-130	Pass	
Endrin aldehyde	%	97			70-130	Pass	
Endrin ketone	%	111			70-130	Pass	
γ-BHC (Lindane)	%	109			70-130	Pass	
Heptachlor	%	106			70-130	Pass	
Heptachlor epoxide	%	110			70-130	Pass	
Hexachlorobenzene	%	96			70-130	Pass	
Methoxychlor	%	99			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	104			70-130	Pass	
Dimethoate	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethion	%	97			70-130	Pass	
Fenitrothion	%	99			70-130	Pass	
Methyl parathion	%	114			70-130	Pass	
Mevinphos	%	105			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	91			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	109			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	92			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	87			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	87			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	94			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	97			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	%	89			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	87			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	102			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	87			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	102			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	84			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	86			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	97			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	90			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	76			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	98			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	70			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	147			50-150	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			70-130	Pass	
Cadmium	%	101			70-130	Pass	
Chromium	%	100			70-130	Pass	
Copper	%	100			70-130	Pass	
Lead	%	97			70-130	Pass	
Mercury	%	99			70-130	Pass	
Nickel	%	97			70-130	Pass	
Zinc	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-No10109	NCP	%	89			70-130	Pass	
TRH C10-C14	S18-No10109	NCP	%	95			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-No10109	NCP	%	88			70-130	Pass	
Toluene	S18-No10109	NCP	%	89			70-130	Pass	
Ethylbenzene	S18-No10109	NCP	%	92			70-130	Pass	
m&p-Xylenes	S18-No10109	NCP	%	94			70-130	Pass	
o-Xylene	S18-No10109	NCP	%	90			70-130	Pass	
Xylenes - Total	S18-No10109	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-No10109	NCP	%	79			70-130	Pass	
TRH C6-C10	S18-No10109	NCP	%	84			70-130	Pass	
TRH >C10-C16	S18-No10109	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-No06612	NCP	%	98			70-130	Pass	
Acenaphthylene	S18-No06612	NCP	%	100			70-130	Pass	
Anthracene	S18-No06612	NCP	%	115			70-130	Pass	
Benz(a)anthracene	S18-No06612	NCP	%	102			70-130	Pass	
Benzo(a)pyrene	S18-No06612	NCP	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	S18-No06612	NCP	%	88			70-130	Pass	
Benzo(g,h,i)perylene	S18-No06612	NCP	%	108			70-130	Pass	
Benzo(k)fluoranthene	S18-No06612	NCP	%	106			70-130	Pass	
Chrysene	S18-No06612	NCP	%	105			70-130	Pass	
Dibenz(a,h)anthracene	S18-No06612	NCP	%	109			70-130	Pass	
Fluoranthene	S18-No06612	NCP	%	100			70-130	Pass	
Fluorene	S18-No06612	NCP	%	112			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-No06612	NCP	%	110			70-130	Pass	
Naphthalene	S18-No06612	NCP	%	105			70-130	Pass	
Phenanthrene	S18-No06612	NCP	%	115			70-130	Pass	
Pyrene	S18-No06612	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4,4'-DDD	S18-No10466	NCP	%	124			70-130	Pass	
4,4'-DDE	S18-No08561	NCP	%	115			70-130	Pass	
4,4'-DDT	S18-No09367	NCP	%	74			70-130	Pass	
a-BHC	S18-No08561	NCP	%	106			70-130	Pass	
Aldrin	S18-No08561	NCP	%	112			70-130	Pass	
b-BHC	S18-No08561	NCP	%	94			70-130	Pass	
d-BHC	S18-No08561	NCP	%	106			70-130	Pass	
Dieldrin	S18-No08561	NCP	%	112			70-130	Pass	
Endosulfan I	S18-No08561	NCP	%	118			70-130	Pass	
Endosulfan II	S18-No08561	NCP	%	119			70-130	Pass	
Endosulfan sulphate	S18-No08561	NCP	%	109			70-130	Pass	
Endrin	S18-No08561	NCP	%	82			70-130	Pass	
Endrin aldehyde	S18-No08561	NCP	%	103			70-130	Pass	
Endrin ketone	S18-No08561	NCP	%	93			70-130	Pass	
g-BHC (Lindane)	S18-No08561	NCP	%	91			70-130	Pass	
Heptachlor	S18-No09367	NCP	%	104			70-130	Pass	
Heptachlor epoxide	S18-No08561	NCP	%	111			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Hexachlorobenzene	S18-No08561	NCP	%	95			70-130	Pass	
Methoxychlor	S18-No09367	NCP	%	91			70-130	Pass	
Toxaphene	S18-No07163	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S18-No06612	NCP	%	113			70-130	Pass	
Dimethoate	S18-No06612	NCP	%	116			70-130	Pass	
Ethion	S18-No06612	NCP	%	108			70-130	Pass	
Fenitrothion	S18-No06612	NCP	%	109			70-130	Pass	
Methyl parathion	S18-No06612	NCP	%	130			70-130	Pass	
Mevinphos	S18-No06612	NCP	%	108			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S18-No08561	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B18-Oc39428	NCP	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B18-Oc39428	NCP	%	92			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B18-Oc39428	NCP	%	89			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B18-Oc39428	NCP	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B18-Oc39428	NCP	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	B18-Oc39428	NCP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B18-Oc39428	NCP	%	83			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B18-Oc39428	NCP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B18-Oc39428	NCP	%	84			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	B18-Oc39428	NCP	%	84			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B18-Oc39428	NCP	%	86			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	B18-Oc39428	NCP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B18-Oc39428	NCP	%	86			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B18-Oc39428	NCP	%	100			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B18-Oc39428	NCP	%	102			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B18-Oc39428	NCP	%	140			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B18-Oc39428	NCP	%	81			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B18-Oc39428	NCP	%	87			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B18-Oc39428	NCP	%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B18-Oc39428	NCP	%	86			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B18-Oc39428	NCP	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B18-Oc39428	NCP	%	84			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctanesulfonic acid (PFOS)	B18-Oc39428	NCP	%	94			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B18-Oc39428	NCP	%	82			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B18-Oc39428	NCP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B18-Oc39428	NCP	%	89			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B18-Oc39428	NCP	%	121			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B18-Oc39428	NCP	%	108			50-150	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-No02665	NCP	%	75			70-130	Pass	
Cadmium	S18-No02665	NCP	%	103			70-130	Pass	
Chromium	S18-No02665	NCP	%	105			70-130	Pass	
Copper	S18-No02665	NCP	%	109			70-130	Pass	
Lead	S18-No02665	NCP	%	106			70-130	Pass	
Mercury	S18-No02665	NCP	%	111			70-130	Pass	
Nickel	S18-No02665	NCP	%	112			70-130	Pass	
Zinc	S18-No02665	NCP	%	106			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S18-No10108	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S18-No05313	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S18-No05313	NCP	mg/kg	< 50	55	<1	30%	Pass	
TRH C29-C36	S18-No05313	NCP	mg/kg	< 50	77	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S18-No10108	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S18-No10108	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S18-No10108	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S18-No10108	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S18-No10108	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total	S18-No10108	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S18-No10108	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S18-No10108	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH >C10-C16	S18-No05313	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S18-No05313	NCP	mg/kg	< 100	100	<1	30%	Pass	
TRH >C34-C40	S18-No05313	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Benzo(b&j)fluoranthene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-No07842	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S18-No08560	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No08560	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No08560	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Toxaphene	S18-No08560	NCP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No02927	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Fenthion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No02927	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No02927	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No02927	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1221	S18-No08560	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1242	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1248	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1254	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Aroclor-1260	S18-No08560	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass

Duplicate								
Perfluoroalkyl sulfonic acids (PFASs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No08954	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No08954	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-No11885	NCP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S18-No10434	NCP	mg/kg	0.6	0.5	12	30%	Pass
Chromium	S18-No05610	NCP	mg/kg	5.7	5.5	4.0	30%	Pass
Copper	S18-No11885	NCP	mg/kg	20	22	9.0	30%	Pass
Lead	S18-No05610	NCP	mg/kg	120	120	4.0	30%	Pass
Mercury	S18-No10434	NCP	mg/kg	0.6	0.5	19	30%	Pass
Nickel	S18-No05610	NCP	mg/kg	6.6	6.8	3.0	30%	Pass
Zinc	S18-No05610	NCP	mg/kg	77	81	5.0	30%	Pass
Duplicate								
				Result 1	Result 2	RPD		
% Moisture	S18-No08787	CP	%	17	16	3.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Nibha Vaidya	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Gabriele Cordero	Senior Analyst-Metal (NSW)
Jonathon Angell	Senior Analyst-Organic (QLD)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Enviro Sample NSW

To: Alena Bounkeua; COC NSW
Subject: RE: Request for Analysis | Work Order: 625312, 625350 and 625685

From: Alicia Cronly
Sent: Monday, 5 November 2018 4:45:30 PM (UTC+10:00) Canberra, Melbourne, Sydney
To: Nibha Vaidya
Cc: Ian Batterley; Roxanne McKinnon
Subject: Request for Analysis | Work Order: 625312, 625350 and 625685

EXTERNAL EMAIL*

Hi Nibha,

Hope your weekend was nice!

Could I please get the following analyses scheduled for samples under the following work orders for Standard TAT:

625312

- Asbestos (presence absence)
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
 - o SS05_F
 - o TP101_SS
 - o TP102_SS
 - o TP105_SS
 - o TP107_0.6-0.7
- TRH, BTEX, OCC/OCP, PAHs, heavy metals
 - o SS01_0.0-0.1 through to SS05_0.0-0.1
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP101_0.4-0.5
 - o TP102_1.0-1.1
 - o TP102_1.6-1.7
 - o TP105_0.4-0.5
 - o TP106_0.8-0.9
 - o TP107_0.5-0.6
 - o QC101_0.8-0.9
- PFAS
 - o TP105_0.4-0.5
 - o TP107_0.5-0.6

625350

- Asbestos (presence/absence)
 - o TP115_3.0-3.1
 - o TP115_3.0-3.1_F
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP111_1.8-1.9
 - o TP111_2.1-2.2
 - o TP113_0.2-0.3

- o TP114_1.4-1.5
- o TP114_3.7-3.8
- o TP115_2.4-2.5
- o TP115_3.6-3.7
- o QC103_0.2-0.3
- PFAS
 - o TP111_1.8-1.9
 - o TP113_1.1-1.2
 - o TP114_1.4-1.5
 - o TP115_2.4-2.5
 - o QC104_1.1-1.2

625685

- Asbestos (presence/absence)
 - o SP02_01112018_F
 - o SP05_01112018_F
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
- BTEX
 - o QC303
 - o QC403
- TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals
 - o TP119_2.4-2.5
 - o TP119_3.7-3.8
 - o SB03_0.7-0.8
 - o SB03_1.9-2.0
 - o SB03_2.7-2.8
 - o SB04_0.1-0.2
 - o SB05_1.9-2.0
 - o SB05_2.5-2.6
 - o QC105_01112018
- PFAS
 - o TP119_2.4-2.5
- SPOCAS
 - o SB03_5.5-5.6

Alicia Cronly

Environmental Scientist



Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent St, Sydney NSW 2000

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Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: **Alicia Cronly**
Project name: **ADDITIONAL - PHASE 2 DUE DILIGENCE**
Project ID: **S16913**
COC number: **Not provided**
Turn around time: **5 Day**
Date/Time received: **Nov 5, 2018 4:45 PM**
Eurofins | mgt reference: **626499**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☐ Split sample sent to requested external lab.
- ☐ Some samples have been subcontracted.
- N/A Custody Seals intact (if used).

Notes

SPOCAS bag not received for SB03_5.5-5.6 - analysis cancelled. Analysis scheduled for SB03_3.9-4.0

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Alicia Cronly - Alicia.Cronly@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626499
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	SPOCAS Suite	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	SP02_011120 18_F	Nov 01, 2018		Building Materials	S18-No08945		X												
2	SP05_011120 18_F	Nov 01, 2018		Building Materials	S18-No08946		X												
3	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No08947	X			X	X	X	X	X	X		X		X	
4	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No08948	X			X	X	X	X	X	X		X		X	
5	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No08949	X			X	X	X	X	X	X		X		X	
6	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No08950	X			X	X	X	X	X	X		X		X	
7	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No08951				X	X	X	X	X	X		X		X	
8	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No08952				X	X	X	X	X	X		X		X	

Company Name: Senversa Pty Ltd NSW
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Received: Nov 5, 2018 4:45 PM
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Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	SPOCAS Suite	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
9	QC105_01112 018	Nov 01, 2018		Soil	S18-No08953				X	X	X	X	X	X		X		X	
10	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No08954				X	X	X	X	X	X		X		X	X
11	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No08955				X	X	X	X	X	X		X		X	
12	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No08956			X											
13	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No09376										X		X		
Test Counts						4	2	1	9	9	9	9	9	9	1	10	10	9	1

Certificate of Analysis



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025—Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000

Attention: Alicia Cronly
Report 626499-AID
Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018
Date Reported Nov 13, 2018

Methodology:

Asbestos Fibre
Identification

Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques.

NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.

Unknown Mineral
Fibres

Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity.

NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.

Subsampling Soil
Samples

The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed.

NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.

Bonded asbestos-
containing material
(ACM)

The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination. The resultant material is then further examined in accordance with AS 4964 - 2004.

NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.

Limit of Reporting

The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w).

The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk).

NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos". This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.

Project Name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Date Sampled Nov 01, 2018
Report 626499-AID

Client Sample ID	Eurofins mgt Sample No.	Date Sampled	Sample Description	Result
SP02_01112018_F	18-No08945	Nov 01, 2018	Approximate Sample 63g / 90x40x4mm Sample consisted of: Grey compressed fibre cement fragments	Chrysotile asbestos detected.
SP05_01112018_F	18-No08946	Nov 01, 2018	Approximate Sample 7g / 50x25x3mm Sample consisted of: Grey fibre cement material	Chrysotile asbestos detected.
SB03_0.7-0.8	18-No08947	Nov 01, 2018	Approximate Sample 413g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SB03_1.9-2.0	18-No08948	Nov 01, 2018	Approximate Sample 202g Sample consisted of: Brown fine-grained sandy soil	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SB03_2.7-2.8	18-No08949	Nov 01, 2018	Approximate Sample 256g Sample consisted of: Brown coarse-grained soil	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.
SB04_0.1-0.2	18-No08950	Nov 01, 2018	Approximate Sample 399g Sample consisted of: Brown coarse-grained soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No respirable fibres detected.

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported. A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Nov 07, 2018	Indefinite
Asbestos - LTM-ASB-8020	Sydney	Nov 07, 2018	Indefinite

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626499
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	SPOCAS Suite	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	SP02_011120 18_F	Nov 01, 2018		Building Materials	S18-No08945		X												
2	SP05_011120 18_F	Nov 01, 2018		Building Materials	S18-No08946		X												
3	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No08947	X			X	X	X	X	X	X		X		X	
4	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No08948	X			X	X	X	X	X	X		X		X	
5	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No08949	X			X	X	X	X	X	X		X		X	
6	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No08950	X			X	X	X	X	X	X		X		X	
7	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No08951				X	X	X	X	X	X		X		X	
8	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No08952				X	X	X	X	X	X		X		X	

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Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	SPOCAS Suite	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
9	QC105_01112 018	Nov 01, 2018		Soil	S18-No08953				X	X	X	X	X	X		X		X	
10	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No08954				X	X	X	X	X	X		X		X	X
11	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No08955				X	X	X	X	X	X		X		X	
12	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No08956			X											
13	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No09376										X		X		
Test Counts						4	2	1	9	9	9	9	9	9	1	10	10	9	1

Internal Quality Control Review and Glossary

General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the Sample Receipt Advice.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w: weight for weight basis	grams per kilogram
Filter loading:	fibres/100 graticule areas
Reported Concentration:	fibres/mL
Flowrate:	L/min

Terms

Dry	Sample is dried by heating prior to analysis
LOR	Limit of Reporting
COC	Chain of Custody
SRA	Sample Receipt Advice
ISO	International Standards Organisation
AS	Australian Standards
WA DOH	Reference document for the NEPM. Government of Western Australia, Guidelines for the Assessment, Remediation and Management of Asbestos-Contaminated Sites in Western Australia (2009), including supporting document Recommended Procedures for Laboratory Analysis of Asbestos in Soil (2011)
NEPM	National Environment Protection (Assessment of Site Contamination) Measure, 2013 (as amended)
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded and/or sound condition. For the purposes of the NEPM, ACM is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
AF	Asbestos Fines. Asbestos containing materials, including friable, weathered and bonded materials, able to pass a 7mm x 7mm sieve. Considered under the NEPM as equivalent to "non-bonded / friable".
FA	Fibrous Asbestos. Asbestos containing materials in a friable and/or severely weathered condition. For the purposes of the NEPM, FA is generally restricted to those materials that do not pass a 7mm x 7mm sieve.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres in the matrix.

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N/A	Not applicable

Asbestos Counter/Identifier:

Karthik Surisetty Senior Analyst-Asbestos (NSW)

Authorised by:

Sayeed Abu Senior Analyst-Asbestos (NSW)



Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Alicia Cronly

Report 626499-S
Project name ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID S16913
Received Date Nov 05, 2018

Client Sample ID			SB03_0.7-0.8	SB03_1.9-2.0	SB03_2.7-2.8	SB04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08947	S18-No08948	S18-No08949	S18-No08950
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	27	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	130	150	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-36 (Total)	50	mg/kg	< 50	157	150	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	80	70	70	80
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	130	170	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	130	170	< 100
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			SB03_0.7-0.8	SB03_1.9-2.0	SB03_2.7-2.8	SB04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08947	S18-No08948	S18-No08949	S18-No08950
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	74	92	108	104
p-Terphenyl-d14 (surr.)	1	%	79	93	109	110
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	1.0	< 0.1
4,4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4,4'-DDE	0.05	mg/kg	< 0.05	0.43	< 0.05	< 0.05
4,4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
α-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
β-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
δ-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	0.06	0.07	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
γ-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	0.06	0.07	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	0.43	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	0.49	1.07	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	1	< 0.1
Dibutylchloroendate (surr.)	1	%	80	77	84	107
Tetrachloro-m-xylene (surr.)	1	%	65	100	130	91
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SB03_0.7-0.8	SB03_1.9-2.0	SB03_2.7-2.8	SB04_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08947	S18-No08948	S18-No08949	S18-No08950
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	71	80	84	91
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	80	77	84	107
Tetrachloro-m-xylene (surr.)	1	%	65	100	130	91
Heavy Metals						
Arsenic	2	mg/kg	4.6	3.5	2.0	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	25	11	18	9.8
Copper	5	mg/kg	25	170	29	< 5
Lead	5	mg/kg	93	43	270	8.8
Mercury	0.1	mg/kg	< 0.1	0.3	3.5	< 0.1
Nickel	5	mg/kg	12	73	< 5	< 5
Zinc	5	mg/kg	110	150	45	5.4
% Moisture	1	%	10	18	36	11

Client Sample ID			SB05_1.9-2.0	SB05_2.5-2.6	QC105_011120	TP119_2.4-2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08951	S18-No08952	S18-No08953	S18-No08954
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	110
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	180
TRH C10-36 (Total)	50	mg/kg	< 50	< 50	< 50	290
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	73	86	74
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	220
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	220
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	98	96	99	97
p-Terphenyl-d14 (surr.)	1	%	100	114	112	101

Client Sample ID			SB05_1.9-2.0	SB05_2.5-2.6	QC105_011120	TP119_2.4-2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08951	S18-No08952	S18-No08953	S18-No08954
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
a-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
b-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
d-BHC	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.06
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
g-BHC (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Toxaphene	1	mg/kg	< 1	< 1	< 1	< 1
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	0.06
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchloroendate (surr.)	1	%	97	93	90	100
Tetrachloro-m-xylene (surr.)	1	%	81	85	79	72
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	< 2	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2

Client Sample ID			SB05_1.9-2.0	SB05_2.5-2.6	QC105_011120	TP119_2.4-2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08951	S18-No08952	S18-No08953	S18-No08954
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	< 2	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Omethoate	2	mg/kg	< 2	< 2	< 2	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	80	88	91	87
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	97	93	90	100
Tetrachloro-m-xylene (surr.)	1	%	81	85	79	72
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluoropentanoic acid (PFPeA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorohexanoic acid (PFHxA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluoroheptanoic acid (PFHpA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorooctanoic acid (PFOA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorononanoic acid (PFNA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorodecanoic acid (PFDA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluoroundecanoic acid (PFUnDA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorododecanoic acid (PFDoDA) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorotridecanoic acid (PFTTrDA) ^{N15}	5	ug/kg	-	-	-	< 5
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	5	ug/kg	-	-	-	< 5
13C4-PFBA (surr.)	1	%	-	-	-	122
13C5-PFPeA (surr.)	1	%	-	-	-	109
13C5-PFHxA (surr.)	1	%	-	-	-	126
13C4-PFHpA (surr.)	1	%	-	-	-	113
13C8-PFOA (surr.)	1	%	-	-	-	130
13C5-PFNA (surr.)	1	%	-	-	-	120
13C6-PFDA (surr.)	1	%	-	-	-	143
13C2-PFUnDA (surr.)	1	%	-	-	-	131
13C2-PFDoDA (surr.)	1	%	-	-	-	137
13C2-PFTeDA (surr.)	1	%	-	-	-	137

Client Sample ID			SB05_1.9-2.0	SB05_2.5-2.6	QC105_011120	TP119_2.4-2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08951	S18-No08952	S18-No08953	S18-No08954
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	5	ug/kg	-	-	-	< 5
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	5	ug/kg	-	-	-	< 5
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	5	ug/kg	-	-	-	< 5
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	5	ug/kg	-	-	-	< 5
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	5	ug/kg	-	-	-	< 5
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	10	ug/kg	-	-	-	< 10
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	10	ug/kg	-	-	-	< 10
13C8-FOSA (surr.)	1	%	-	-	-	92
D3-N-MeFOSA (surr.)	1	%	-	-	-	117
D5-N-EtFOSA (surr.)	1	%	-	-	-	152
D7-N-MeFOSE (surr.)	1	%	-	-	-	99
D9-N-EtFOSE (surr.)	1	%	-	-	-	119
D5-N-EtFOSAA (surr.)	1	%	-	-	-	143
D3-N-MeFOSAA (surr.)	1	%	-	-	-	94
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	5	ug/kg	-	-	-	< 5
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	5	ug/kg	-	-	-	< 5
Perfluorooctanesulfonic acid (PFOS) ^{N11}	5	ug/kg	-	-	-	< 5
Perfluorodecanesulfonic acid (PFDS) ^{N15}	5	ug/kg	-	-	-	< 5
13C3-PFBS (surr.)	1	%	-	-	-	141
18O2-PFHxS (surr.)	1	%	-	-	-	124
13C8-PFOS (surr.)	1	%	-	-	-	132
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	10	ug/kg	-	-	-	< 10
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	5	ug/kg	-	-	-	< 5
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	5	ug/kg	-	-	-	< 5
13C2-4:2 FTSA (surr.)	1	%	-	-	-	121
13C2-6:2 FTSA (surr.)	1	%	-	-	-	116
13C2-8:2 FTSA (surr.)	1	%	-	-	-	125
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	-	-	-	< 5
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	-	-	-	< 5
Sum of WA DWER PFAS (n=10)*	10	ug/kg	-	-	-	< 10
Sum of PFASs (n=28)*	50	ug/kg	-	-	-	< 50

Client Sample ID			SB05_1.9-2.0	SB05_2.5-2.6	QC105_011120	TP119_2.4-2.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins mgt Sample No.			S18-No08951	S18-No08952	S18-No08953	S18-No08954
Date Sampled			Nov 01, 2018	Nov 01, 2018	Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit				
Heavy Metals						
Arsenic	2	mg/kg	< 2	2.5	15	4.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	0.5
Chromium	5	mg/kg	< 5	19	20	32
Copper	5	mg/kg	< 5	< 5	38	110
Lead	5	mg/kg	45	8.9	57	200
Mercury	0.1	mg/kg	0.1	< 0.1	< 0.1	0.5
Nickel	5	mg/kg	< 5	< 5	11	13
Zinc	5	mg/kg	5.6	11	68	610
% Moisture	1	%	29	21	11	27

Client Sample ID			TP119_3.7-3.8	SB03_3.9-4.0
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-No08955	S18-No09376
Date Sampled			Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	310	-
TRH C15-C28	50	mg/kg	83	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-36 (Total)	50	mg/kg	393	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	78	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene ^{N02}	0.5	mg/kg	< 0.5	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1) ^{N04}	20	mg/kg	< 20	-
TRH >C10-C16	50	mg/kg	350	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	50	mg/kg	350	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	350	-
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	-

Client Sample ID			TP119_3.7-3.8	SB03_3.9-4.0
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-No08955	S18-No09376
Date Sampled			Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene ^{N07}	0.5	mg/kg	< 0.5	-
Benzo(g,h,i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a,h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1,2,3-cd)pyrene	0.5	mg/kg	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	88	-
p-Terphenyl-d14 (surr.)	1	%	90	-
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	0.2	-
4,4'-DDD	0.05	mg/kg	< 0.05	-
4,4'-DDE	0.05	mg/kg	< 0.05	-
4,4'-DDT	0.05	mg/kg	< 0.05	-
α-BHC	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
β-BHC	0.05	mg/kg	< 0.05	-
δ-BHC	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
γ-BHC (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-
Toxaphene	1	mg/kg	< 1	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.2	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.2	-
Dibutylchloroendate (surr.)	1	%	74	-
Tetrachloro-m-xylene (surr.)	1	%	63	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-

Client Sample ID			TP119_3.7-3.8	SB03_3.9-4.0
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-No08955	S18-No09376
Date Sampled			Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	78	-
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-
Dibutylchloredate (surr.)	1	%	74	-
Tetrachloro-m-xylene (surr.)	1	%	63	-
Heavy Metals				
Arsenic	2	mg/kg	2.9	-
Cadmium	0.4	mg/kg	< 0.4	-
Chromium	5	mg/kg	26	-
Copper	5	mg/kg	59	-
Lead	5	mg/kg	140	-
Mercury	0.1	mg/kg	1.2	-
Nickel	5	mg/kg	< 5	-
Zinc	5	mg/kg	180	-

Client Sample ID			TP119_3.7-3.8	SB03_3.9-4.0
Sample Matrix			Soil	Soil
Eurofins mgt Sample No.			S18-No08955	S18-No09376
Date Sampled			Nov 01, 2018	Nov 01, 2018
Test/Reference	LOR	Unit		
SPOCAS Suite				
pH-KCL	0.1	pH Units	-	5.0
pH-OX	0.1	pH Units	-	1.9
Acid trail - Titratable Actual Acidity	2	mol H+/t	-	34
Acid trail - Titratable Peroxide Acidity	2	mol H+/t	-	1600
Acid trail - Titratable Sulfidic Acidity	2	mol H+/t	-	1600
sulfidic - TAA equiv. S% pyrite	0.02	% pyrite S	-	0.05
sulfidic - TPA equiv. S% pyrite	0.02	% pyrite S	-	2.6
sulfidic - TSA equiv. S% pyrite	0.02	% pyrite S	-	2.5
Sulfur - KCl Extractable	0.02	% S	-	0.14
Sulfur - Peroxide	0.02	% S	-	2.7
Sulfur - Peroxide Oxidisable Sulfur	0.02	% S	-	2.5
acidity - Peroxide Oxidisable Sulfur	10	mol H+/t	-	1600
HCl Extractable Sulfur	0.02	% S	-	n/a
Net Acid soluble sulfur	0.02	% S	-	n/a
Net Acid soluble sulfur - acidity units	10	mol H+/t	-	n/a
Net Acid soluble sulfur - equivalent S% pyrite ^{S02}	0.02	% S	-	n/a
Calcium - KCl Extractable	0.02	% Ca	-	0.10
Calcium - Peroxide	0.02	% Ca	-	0.10
Acid Reacted Calcium	0.02	% Ca	-	< 0.02
acidity - Acid Reacted Calcium	10	mol H+/t	-	< 10
sulfidic - Acid Reacted Ca equiv. S% pyrite	0.02	% S	-	< 0.02
Magnesium - KCl Extractable	0.02	% Mg	-	0.09
Magnesium - Peroxide	0.02	% Mg	-	0.10
Acid Reacted Magnesium	0.02	% Mg	-	< 0.02
acidity - Acid Reacted Magnesium	10	mol H+/t	-	< 10
sulfidic - Acid Reacted Mg equiv. S% pyrite	0.02	% S	-	< 0.02
Acid Neutralising Capacity (ANCE)	0.02	%CaCO3	-	n/a
Acid Neutralising Capacity - Acidity units (a-ANCE)	10	mol H+/t	-	n/a
Acid Neutralising Capacity - equivalent S% pyrite(s-ANCE)	0.02	% S	-	n/a
ANC Fineness Factor		factor	-	1.5
SPOCAS - Net Acidity (Sulfur Units)	0.02	% S	-	2.6
SPOCAS - Net Acidity (Acidity Units)	10	mol H+/t	-	1600
SPOCAS - Liming rate	1	kg CaCO3/t	-	120
Extraneous Material				
<2mm Fraction	0.005	g	-	140
>2mm Fraction	0.005	g	-	< 0.005
Analysed Material	0.1	%	-	100
Extraneous Material	0.1	%	-	< 0.1
% Moisture	1	%	29	46

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.

A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Total Recoverable Hydrocarbons - 1999 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Nov 09, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Nov 09, 2018	14 Day
Total Recoverable Hydrocarbons - 2013 NEPM Fractions - Method: LTM-ORG-2010 TRH C6-C40	Melbourne	Nov 09, 2018	14 Day
BTEX - Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices	Melbourne	Nov 09, 2018	14 Day
Polycyclic Aromatic Hydrocarbons - Method: LTM-ORG-2130 PAH and Phenols in Soil and Water	Melbourne	Nov 09, 2018	14 Day
Organochlorine Pesticides - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Melbourne	Nov 09, 2018	14 Day
Organophosphorus Pesticides - Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS	Melbourne	Nov 09, 2018	14 Day
Polychlorinated Biphenyls - Method: LTM-ORG-2220 OCP & PCB in Soil and Water	Melbourne	Nov 09, 2018	28 Days
Metals M8 - Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS	Melbourne	Nov 09, 2018	28 Days
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonamido substances - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
Perfluoroalkyl sulfonic acids (PFSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs) - Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)	Brisbane	Nov 08, 2018	180 Day
SPOCAS Suite			
SPOCAS Suite - Method: LTM-GEN-7050	Brisbane	Nov 08, 2018	6 Week
Extraneous Material - Method: LTM-GEN-7050/7070	Brisbane	Nov 08, 2018	6 Week
% Moisture - Method: LTM-GEN-7080 Moisture	Brisbane	Nov 08, 2018	14 Day

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: ADDITIONAL - PHASE 2 DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 626499
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 5, 2018 4:45 PM
Due: Nov 12, 2018
Priority: 5 Day
Contact Name: Alicia Cronly

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Asbestos - AS4964	Asbestos Absence /Presence	CANCELLED	Polycyclic Aromatic Hydrocarbons	Organochlorine Pesticides	Organophosphorus Pesticides	Polychlorinated Biphenyls	Metals M8	BTEX	SPOCAS Suite	Moisture Set	Moisture Set	Total Recoverable Hydrocarbons	Per- and Polyfluoralkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
External Laboratory																			
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID														
1	SP02_011120 18_F	Nov 01, 2018		Building Materials	S18-No08945		X												
2	SP05_011120 18_F	Nov 01, 2018		Building Materials	S18-No08946		X												
3	SB03_0.7-0.8	Nov 01, 2018		Soil	S18-No08947	X			X	X	X	X	X	X		X		X	
4	SB03_1.9-2.0	Nov 01, 2018		Soil	S18-No08948	X			X	X	X	X	X	X		X		X	
5	SB03_2.7-2.8	Nov 01, 2018		Soil	S18-No08949	X			X	X	X	X	X	X		X		X	
6	SB04_0.1-0.2	Nov 01, 2018		Soil	S18-No08950	X			X	X	X	X	X	X		X		X	
7	SB05_1.9-2.0	Nov 01, 2018		Soil	S18-No08951				X	X	X	X	X	X		X		X	
8	SB05_2.5-2.6	Nov 01, 2018		Soil	S18-No08952				X	X	X	X	X	X		X		X	

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Melbourne Laboratory - NATA Site # 1254 & 14271									X	X	X	X	X	X		X	X	X	
Sydney Laboratory - NATA Site # 18217						X	X	X											
Brisbane Laboratory - NATA Site # 20794															X	X	X		X
Perth Laboratory - NATA Site # 23736																			
9	QC105_01112 018	Nov 01, 2018		Soil	S18-No08953				X	X	X	X	X	X		X		X	
10	TP119_2.4-2.5	Nov 01, 2018		Soil	S18-No08954				X	X	X	X	X	X		X		X	X
11	TP119_3.7-3.8	Nov 01, 2018		Soil	S18-No08955				X	X	X	X	X	X		X		X	
12	SB03_5.5-5.6	Nov 01, 2018		Soil	S18-No08956			X											
13	SB03_3.9-4.0	Nov 01, 2018		Soil	S18-No09376										X		X		
Test Counts						4	2	1	9	9	9	9	9	9	1	10	10	9	1

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g,h,i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a,h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1,2,3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4,4'-DDD	mg/kg	< 0.05			0.05	Pass	
4,4'-DDE	mg/kg	< 0.05			0.05	Pass	
4,4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-BHC	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-BHC	mg/kg	< 0.05			0.05	Pass	
d-BHC	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-BHC (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 1			1	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	114			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
BTEX							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzene	%	115			70-130	Pass	
Toluene	%	108			70-130	Pass	
Ethylbenzene	%	106			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
Xylenes - Total	%	103			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	108			70-130	Pass	
TRH C6-C10	%	106			70-130	Pass	
TRH >C10-C16	%	89			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	78			70-130	Pass	
Anthracene	%	97			70-130	Pass	
Benz(a)anthracene	%	73			70-130	Pass	
Benzo(a)pyrene	%	89			70-130	Pass	
Benzo(b&j)fluoranthene	%	81			70-130	Pass	
Benzo(g,h,i)perylene	%	74			70-130	Pass	
Benzo(k)fluoranthene	%	95			70-130	Pass	
Chrysene	%	81			70-130	Pass	
Dibenz(a,h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	78			70-130	Pass	
Fluorene	%	84			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	72			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	80			70-130	Pass	
Pyrene	%	77			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4,4'-DDD	%	107			70-130	Pass	
4,4'-DDE	%	118			70-130	Pass	
4,4'-DDT	%	123			70-130	Pass	
α-BHC	%	112			70-130	Pass	
Aldrin	%	112			70-130	Pass	
β-BHC	%	114			70-130	Pass	
δ-BHC	%	110			70-130	Pass	
Dieldrin	%	107			70-130	Pass	
Endosulfan I	%	108			70-130	Pass	
Endosulfan II	%	118			70-130	Pass	
Endosulfan sulphate	%	110			70-130	Pass	
Endrin	%	115			70-130	Pass	
Endrin aldehyde	%	108			70-130	Pass	
Endrin ketone	%	115			70-130	Pass	
γ-BHC (Lindane)	%	107			70-130	Pass	
Heptachlor	%	113			70-130	Pass	
Heptachlor epoxide	%	97			70-130	Pass	
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	103			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	79			70-130	Pass	
Dimethoate	%	71			70-130	Pass	
Ethion	%	119			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Fenitrothion	%	106			70-130	Pass	
Methyl parathion	%	102			70-130	Pass	
Mevinphos	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1260	%	101			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	97			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	110			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	96			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	102			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	101			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	104			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	93			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	65			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	91			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	97			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	96			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	87			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	93			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	%	86			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	107			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	80			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	73			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	87			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	78			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	90			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	87			50-150	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	100			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	112			80-120	Pass	
Copper	%	106			80-120	Pass	
Lead	%	112			80-120	Pass	
Mercury	%	97			75-125	Pass	
Nickel	%	102			80-120	Pass	
Zinc	%	101			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S18-No05328	NCP	%	101			70-130	Pass	
4.4'-DDE	S18-No05328	NCP	%	107			70-130	Pass	
4.4'-DDT	M18-No01042	NCP	%	72			70-130	Pass	
a-BHC	S18-No05328	NCP	%	80			70-130	Pass	
Aldrin	S18-No05328	NCP	%	92			70-130	Pass	
b-BHC	S18-No05328	NCP	%	82			70-130	Pass	
d-BHC	S18-No05328	NCP	%	87			70-130	Pass	
Dieldrin	S18-No05328	NCP	%	99			70-130	Pass	
Endosulfan I	S18-No05328	NCP	%	89			70-130	Pass	
Endosulfan II	S18-No05328	NCP	%	94			70-130	Pass	
Endosulfan sulphate	S18-No05328	NCP	%	106			70-130	Pass	
Endrin	S18-No05328	NCP	%	114			70-130	Pass	
Endrin aldehyde	S18-No05328	NCP	%	99			70-130	Pass	
Endrin ketone	S18-No05328	NCP	%	100			70-130	Pass	
g-BHC (Lindane)	S18-No05328	NCP	%	83			70-130	Pass	
Heptachlor	S18-No05328	NCP	%	104			70-130	Pass	
Heptachlor epoxide	S18-No05328	NCP	%	88			70-130	Pass	
Hexachlorobenzene	S18-No05328	NCP	%	75			70-130	Pass	
Methoxychlor	S18-No05328	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S18-No02008	NCP	%	128			70-130	Pass	
Dimethoate	S18-No02008	NCP	%	91			70-130	Pass	
Ethion	S18-No02008	NCP	%	122			70-130	Pass	
Fenitrothion	S18-No02008	NCP	%	87			70-130	Pass	
Methyl parathion	S18-No02008	NCP	%	80			70-130	Pass	
Mevinphos	S18-No02008	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1260	S18-No03161	NCP	%	126			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S18-No08951	CP	%	88			70-130	Pass	
Acenaphthylene	S18-No08951	CP	%	94			70-130	Pass	
Anthracene	S18-No08951	CP	%	103			70-130	Pass	
Benz(a)anthracene	S18-No08951	CP	%	85			70-130	Pass	
Benzo(a)pyrene	S18-No08951	CP	%	82			70-130	Pass	
Benzo(b&j)fluoranthene	S18-No08951	CP	%	81			70-130	Pass	
Benzo(g,h,i)perylene	S18-No08951	CP	%	86			70-130	Pass	
Benzo(k)fluoranthene	S18-No08951	CP	%	88			70-130	Pass	
Chrysene	S18-No08951	CP	%	104			70-130	Pass	
Dibenz(a,h)anthracene	S18-No08951	CP	%	83			70-130	Pass	
Fluoranthene	S18-No08951	CP	%	107			70-130	Pass	
Fluorene	S18-No08951	CP	%	95			70-130	Pass	
Indeno(1,2,3-cd)pyrene	S18-No08951	CP	%	76			70-130	Pass	
Naphthalene	S18-No08951	CP	%	95			70-130	Pass	
Phenanthrene	S18-No08951	CP	%	96			70-130	Pass	
Pyrene	S18-No08951	CP	%	107			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S18-No08951	CP	%	107			75-125	Pass	
Cadmium	S18-No08951	CP	%	103			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Chromium	S18-No08951	CP	%	115			75-125	Pass	
Copper	S18-No08951	CP	%	108			75-125	Pass	
Lead	S18-No08951	CP	%	116			75-125	Pass	
Mercury	S18-No08951	CP	%	100			70-130	Pass	
Nickel	S18-No08951	CP	%	106			75-125	Pass	
Zinc	S18-No08951	CP	%	101			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S18-No08954	CP	%	109			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S18-No08954	CP	%	108			70-130	Pass	
Toluene	S18-No08954	CP	%	104			70-130	Pass	
Ethylbenzene	S18-No08954	CP	%	103			70-130	Pass	
m&p-Xylenes	S18-No08954	CP	%	101			70-130	Pass	
o-Xylene	S18-No08954	CP	%	107			70-130	Pass	
Xylenes - Total	S18-No08954	CP	%	103			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S18-No08954	CP	%	111			70-130	Pass	
TRH C6-C10	S18-No08954	CP	%	105			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S18-No08785	NCP	%	95			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S18-No08785	NCP	%	108			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S18-No08785	NCP	%	97			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S18-No08785	NCP	%	90			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S18-No08785	NCP	%	96			50-150	Pass	
Perfluorononanoic acid (PFNA)	S18-No08785	NCP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S18-No08785	NCP	%	90			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S18-No08785	NCP	%	92			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S18-No08785	NCP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTeDA)	S18-No08785	NCP	%	81			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S18-No08785	NCP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S18-No08785	NCP	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No08785	NCP	%	103			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No08785	NCP	%	93			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No08785	NCP	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No08785	NCP	%	81			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No08785	NCP	%	85			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No08785	NCP	%	89			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorobutanesulfonic acid (PFBS)	S18-No08785	NCP	%	81			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S18-No08785	NCP	%	84			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S18-No08785	NCP	%	93			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S18-No08785	NCP	%	86			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S18-No08785	NCP	%	89			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S18-No08785	NCP	%	84			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No08785	NCP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No08785	NCP	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No08785	NCP	%	85			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No08785	NCP	%	134			50-150	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S18-No08955	CP	%	88			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S18-No08955	CP	%	89			70-130	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S18-No08947	CP	%	10	9.0	13	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g,h,i)perylene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a,h)anthracene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1,2,3-cd)pyrene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S18-No08950	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No08950	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No08950	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No08950	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tetrachlorvinphos	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No08950	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-No08950	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S18-No08950	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-No08950	CP	mg/kg	9.8	9.1	7.0	30%	Pass
Copper	S18-No08950	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	S18-No08950	CP	mg/kg	8.8	7.4	17	30%	Pass
Mercury	S18-No08950	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Nickel	S18-No08950	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-No08950	CP	mg/kg	5.4	6.0	10	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic	S18-No08951	CP	mg/kg	< 2	< 2	<1	30%	Pass
Cadmium	S18-No08951	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass
Chromium	S18-No08951	CP	mg/kg	< 5	< 5	<1	30%	Pass
Copper	S18-No08951	CP	mg/kg	< 5	< 5	<1	30%	Pass
Lead	S18-No08951	CP	mg/kg	45	45	1.0	30%	Pass
Mercury	S18-No08951	CP	mg/kg	0.1	0.1	3.0	30%	Pass
Nickel	S18-No08951	CP	mg/kg	< 5	< 5	<1	30%	Pass
Zinc	S18-No08951	CP	mg/kg	5.6	6.7	18	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C6-C9	S18-No08953	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
BTEX				Result 1	Result 2	RPD		
Benzene	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Toluene	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Ethylbenzene	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
m&p-Xylenes	S18-No08953	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
o-Xylene	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Xylenes - Total	S18-No08953	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S18-No08953	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S18-No08953	CP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4,4'-DDD	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDE	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4,4'-DDT	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-BHC	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-BHC	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-BHC	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-BHC (Lindane)	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	S18-No08953	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	S18-No08953	CP	mg/kg	< 1	< 1	<1	30%	Pass
Duplicate								
Polychlorinated Biphenyls				Result 1	Result 2	RPD		
Aroclor-1016	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1221	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1232	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1242	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1248	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1254	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Aroclor-1260	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Total PCB*	S18-No08953	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD		
TRH C10-C14	S18-No08954	CP	mg/kg	< 20	< 20	<1	30%	Pass
TRH C15-C28	S18-No08954	CP	mg/kg	110	120	11	30%	Pass
TRH C29-C36	S18-No08954	CP	mg/kg	180	210	15	30%	Pass

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
TRH >C10-C16	S18-No08954	CP	mg/kg	< 50	< 50	<1	30%	Pass
TRH >C16-C34	S18-No08954	CP	mg/kg	220	260	16	30%	Pass
TRH >C34-C40	S18-No08954	CP	mg/kg	< 100	< 100	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g,h,i)perylene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a,h)anthracene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	S18-No08954	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	S18-No08954	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dichlorvos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Dimethoate	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Disulfoton	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
EPN	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethoprop	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ethyl parathion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenitrothion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fensulfthion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Fenthion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Malathion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Merphos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Methyl parathion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Mevinphos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Monocrotophos	S18-No08954	CP	mg/kg	< 2	< 2	<1	30%	Pass
Naled	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Omethoate	S18-No08954	CP	mg/kg	< 2	< 2	<1	30%	Pass
Phorate	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pirimiphos-methyl	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Pyrazophos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Ronnel	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Terbufos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Tetrachlorvinphos	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Tokuthion	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Trichloronate	S18-No08954	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorononanoic acid (PFNA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B18-Oc39436	NCP	ug/kg	< 10	< 10	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B18-Oc39436	NCP	ug/kg	< 10	< 10	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass

Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B18-Oc39436	NCP	ug/kg	< 10	< 10	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B18-Oc39436	NCP	ug/kg	< 5	< 5	<1	30%	Pass
Duplicate								
SPOCAS Suite				Result 1	Result 2	RPD		
pH-KCL	S18-No09376	CP	pH Units	5.0	5.0	<1	30%	Pass
pH-OX	S18-No09376	CP	pH Units	1.9	1.9	2.0	30%	Pass
Acid trail - Titratable Actual Acidity	S18-No09376	CP	mol H+/t	34	34	2.0	30%	Pass
Acid trail - Titratable Peroxide Acidity	S18-No09376	CP	mol H+/t	1600	1600	3.0	30%	Pass
Acid trail - Titratable Sulfidic Acidity	S18-No09376	CP	mol H+/t	1600	1600	3.0	30%	Pass
sulfidic - TAA equiv. S% pyrite	S18-No09376	CP	% pyrite S	0.05	0.05	2.0	30%	Pass
sulfidic - TPA equiv. S% pyrite	S18-No09376	CP	% pyrite S	2.6	2.6	3.0	30%	Pass
sulfidic - TSA equiv. S% pyrite	S18-No09376	CP	% pyrite S	2.5	2.6	3.0	30%	Pass
Sulfur - KCl Extractable	S18-No09376	CP	% S	0.14	0.13	5.0	30%	Pass
Sulfur - Peroxide	S18-No09376	CP	% S	2.7	2.7	1.0	30%	Pass
Sulfur - Peroxide Oxidisable Sulfur	S18-No09376	CP	% S	2.5	2.6	2.0	30%	Pass
acidity - Peroxide Oxidisable Sulfur	S18-No09376	CP	mol H+/t	1600	1600	2.0	30%	Pass
HCl Extractable Sulfur	S18-No09376	CP	% S	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur	S18-No09376	CP	% S	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur - acidity units	S18-No09376	CP	mol H+/t	n/a	n/a	n/a	30%	Pass
Net Acid soluble sulfur - equivalent S% pyrite	S18-No09376	CP	% S	n/a	n/a	n/a	30%	Pass
Calcium - KCl Extractable	S18-No09376	CP	% Ca	0.10	0.09	7.0	30%	Pass
Calcium - Peroxide	S18-No09376	CP	% Ca	0.10	0.10	4.0	30%	Pass
Acid Reacted Calcium	S18-No09376	CP	% Ca	< 0.02	< 0.02	<1	30%	Pass
acidity - Acid Reacted Calcium	S18-No09376	CP	mol H+/t	< 10	< 10	<1	30%	Pass
sulfidic - Acid Reacted Ca equiv. S% pyrite	S18-No09376	CP	% S	< 0.02	< 0.02	<1	30%	Pass
Magnesium - KCl Extractable	S18-No09376	CP	% Mg	0.09	0.09	6.0	30%	Pass
Magnesium - Peroxide	S18-No09376	CP	% Mg	0.10	0.10	5.0	30%	Pass
Acid Reacted Magnesium	S18-No09376	CP	% Mg	< 0.02	< 0.02	<1	30%	Pass
acidity - Acid Reacted Magnesium	S18-No09376	CP	mol H+/t	< 10	< 10	<1	30%	Pass
sulfidic - Acid Reacted Mg equiv. S% pyrite	S18-No09376	CP	% S	< 0.02	< 0.02	<1	30%	Pass
Acid Neutralising Capacity (ANCE)	S18-No09376	CP	%CaCO3	n/a	n/a	n/a	30%	Pass
Acid Neutralising Capacity - Acidity units (a-ANCE)	S18-No09376	CP	mol H+/t	n/a	n/a	n/a	30%	Pass
ANC Fineness Factor	S18-No09376	CP	factor	1.5	1.5	<1	30%	Pass
SPOCAS - Liming rate	S18-No09376	CP	kg CaCO3/t	120	120	2.0	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Organic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Myles Clark	Senior Analyst-SPOCAS (QLD)
Nibha Vaidya	Senior Analyst-Asbestos (NSW)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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① michelle.damasio
roxanne.mckinnon @ senversa.com.au
ian.batterley

Chain of Custody Documentation

#627467

Laboratory: EUROFINIS
Address:
Contact:
Phone: (Lane Cove)

Job Number: 546913	Purchase Order: —
Project Name: Phase 2 - Due Diligence	Quote No: —
Sampled By: Michelle Damasio	Turn Around Time: 3 TAT
Project Manager: Roxanne McKinnon	Page: 1 of
Email Report To: (A)	Phone/Mobile: 0450 484 448

[illegible]

Analysis Required		Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
X	TRH; PAH; VOCs	*SHORT HOLDING TIME ANALYSES
X	OCP/OPP	
X	Nutrients	
X	Nitrates	
X	Nitrites	
X	Ammonia	
X	Coliforms (Total/Fecal)	*Please filter for metals! Thanks (MW/04)
X	Phthalates	
X	Heavy Metals	
X	BTEX	
X	PFAS	

Sampler: I attest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:

Sampler Name:

Sampler Name: Michelle Damasio

Signature _____

Signature	

Date:

Date: 13/11/2018

Relinquished By:		Method of Shipment (if applicable):		Received by:	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	
Name/Signature:	Date:	Carrier / Reference #:	Name/Signature:	Date:	
Of:	Time:	Date/Time:	Of:	Time:	

Water Container Codes: B = Unpreserved Plastic; N = Nitric Acid (HNO₃); D = Preserved Plastic; ORG = Other

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic;
V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = H_2SO_4

V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; BA = Blank Bottle

Completed by: _____
Checked by: _____

Sample Receipt Advice

Company name: **Senversa Pty Ltd NSW**
Contact name: Michelle Damasio
Project name: PHASE 2 - DUE DILIGENCE
Project ID: S16913
COC number: Not provided
Turn around time: 3 Day
Date/Time received: Nov 13, 2018 4:56 PM
Eurofins | mgt reference: **627467**

Sample information

- ☒ A detailed list of analytes logged into our LIMS, is included in the attached summary table.
- ☒ All samples have been received as described on the above COC.
- ☒ COC has been completed correctly.
- ☒ Attempt to chill was evident.
- ☒ Appropriately preserved sample containers have been used.
- ☒ All samples were received in good condition.
- ☒ Samples have been provided with adequate time to commence analysis in accordance with the relevant holding times.
- ☒ Appropriate sample containers have been used.
- ☒ Sample containers for volatile analysis received with zero headspace.
- ☒ Split sample sent to requested external lab.
- ☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Contact notes

If you have any questions with respect to these samples please contact:

Nibha Vaidya on Phone : +61 (2) 9900 8415 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Michelle Damasio - Michelle.Damasio@senversa.com.au.

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 - DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 627467
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 13, 2018 4:56 PM
Due: Nov 16, 2018
Priority: 3 Day
Contact Name: Michelle Damasio

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Thermotolerant Coliforms	Total Coliforms	Phthalate Esters	BTEX	Eurofins mgt Suite B14	Volatile Organics	Eurofins mgt Suite B7 (filtered metals)	Eurofins mgt Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														X
Perth Laboratory - NATA Site # 23736														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	MW01	Nov 13, 2018		Water	S18-No16377	X	X	X		X	X	X	X	X
2	MW03	Nov 13, 2018		Water	S18-No16378	X	X	X		X	X	X	X	X
3	MW04	Nov 13, 2018		Water	S18-No16379	X	X	X		X	X	X	X	X
4	MW05	Nov 13, 2018		Water	S18-No16380	X	X	X		X	X	X	X	X
5	QC101_13112 018	Nov 13, 2018		Water	S18-No16381	X	X	X		X	X	X	X	X
6	QC301_13112 018	Nov 13, 2018		Water	S18-No16382				X					
7	QC501_13112 018	Nov 13, 2018		Water	S18-No16383				X					

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SYDNEY
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Sample Detail						Thermotolerant Coliforms	Total Coliforms	Phthalate Esters	BTEX	Eurofins mgt Suite B14	Volatile Organics	Eurofins mgt Suite B7 (filtered metals)	Eurofins mgt Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														X
Perth Laboratory - NATA Site # 23736														
8	QC302_13112 018	Nov 13, 2018		Water	S18-No16384									X
9	QC502_13112 018	Nov 13, 2018		Water	S18-No16385									X
Test Counts						5	5	5	2	5	5	5	5	7

Certificate of Analysis

Senversa Pty Ltd NSW
Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000



NATA Accredited
Accreditation Number 1261
Site Number 18217 & 14271

Accredited for compliance with ISO/IEC 17025 – Testing
The results of the tests, calibrations and/or
measurements included in this document are traceable
to Australian/national standards.

Attention: Roxanne McKinnon

Report 627467-W
Project name PHASE 2 - DUE DILIGENCE
Project ID S16913
Received Date Nov 13, 2018

Client Sample ID			MW01 Water	MW03 Water	G01 MW04 Water	MW05 Water
Sample Matrix			S18-No16377	S18-No16378	S18-No16379	S18-No16380
Eurofins mgt Sample No.			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Date Sampled						
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.04	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.004	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.006	< 0.003
4-Bromofluorobenzene (surr.)	1	%	105	104	96	104
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	< 0.01	< 0.001
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001

Client Sample ID			MW01	MW03	G01MW04	MW05
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16377	S18-No16378	S18-No16379	S18-No16380
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.004	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.002	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.006	< 0.003
Total MAH*	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Bromofluorobenzene (surr.)	1	%	105	104	96	104
Toluene-d8 (surr.)	1	%	104	102	97	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	< 0.01	< 0.02	< 0.01
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.04	< 0.02
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	< 0.02	< 0.04	< 0.02
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			MW01	MW03	G01MW04	MW05
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16377	S18-No16378	S18-No16379	S18-No16380
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Indeno(1,2,3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Fluorobiphenyl (surr.)	1	%	75	64	98	96
p-Terphenyl-d14 (surr.)	1	%	81	73	120	143
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4,4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4,4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
4,4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
α-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
β-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
δ-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
γ-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibutylchloroendate (surr.)	1	%	138	107	103	104
Tetrachloro-m-xylene (surr.)	1	%	111	90	77	78

Client Sample ID			MW01	MW03	G01MW04	MW05
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16377	S18-No16378	S18-No16379	S18-No16380
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Triphenylphosphate (surr.)	1	%	140	90	92	94
Phthalate Esters						
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	0.04	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	^{NO9} 0.03	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	^{NO9} 0.02	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01

Client Sample ID			MW01	MW03	^{G01} MW04	MW05
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16377	S18-No16378	S18-No16379	S18-No16380
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	79	50	78	58
13C5-PFPeA (surr.)	1	%	88	63	81	76
13C5-PFHxA (surr.)	1	%	87	82	84	88
13C4-PFHpA (surr.)	1	%	105	103	100	112
13C8-PFOA (surr.)	1	%	116	116	111	125
13C5-PFNA (surr.)	1	%	115	116	111	120
13C6-PFDA (surr.)	1	%	106	100	105	102
13C2-PFUnDA (surr.)	1	%	90	81	104	89
13C2-PFDoDA (surr.)	1	%	71	55	85	74
13C2-PFTeDA (surr.)	1	%	26	19	29	36
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	62	64	63	68
D3-N-MeFOSA (surr.)	1	%	INT	22	12	14
D5-N-EtFOSA (surr.)	1	%	INT	17	11	11
D7-N-MeFOSE (surr.)	1	%	23	27	31	27
D9-N-EtFOSE (surr.)	1	%	27	27	33	27
D5-N-EtFOSAA (surr.)	1	%	75	71	74	84
D3-N-MeFOSAA (surr.)	1	%	74	72	71	81
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	0.03	0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	^{N09} 0.02	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	^{N09} < 0.01	^{N09} 0.06	< 0.01	^{N09} 0.07
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	121	116	117	119
18O2-PFHxS (surr.)	1	%	126	133	124	135
13C8-PFOS (surr.)	1	%	114	117	117	113

Client Sample ID Sample Matrix Eurofins mgt Sample No. Date Sampled Test/Reference	LOR	Unit	MW01 Water S18-No16377 Nov 13, 2018	MW03 Water S18-No16378 Nov 13, 2018	^{G01} MW04 Water S18-No16379 Nov 13, 2018	MW05 Water S18-No16380 Nov 13, 2018
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	38	50	31	67
13C2-6:2 FTSA (surr.)	1	%	49	78	43	81
13C2-8:2 FTSA (surr.)	1	%	53	61	54	59
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.02	0.06	< 0.01	0.07
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.02	0.06	< 0.01	0.07
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.04	0.06	< 0.01	0.07
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.14	0.07	< 0.05	0.07
Sum of PFASs (n=28)*	0.1	ug/L	0.14	< 0.1	< 0.1	< 0.1
Ammonia (as N)	0.01	mg/L	0.08	2.2	< 0.01	2.0
Nitrate & Nitrite (as N)	0.05	mg/L	0.73	< 0.05	< 0.05	< 0.05
Nitrate (as N)	0.02	mg/L	0.70	< 0.02	0.03	< 0.02
Nitrite (as N)	0.02	mg/L	0.03	< 0.02	< 0.02	< 0.02
Phosphate total (as P)	0.01	mg/L	< 0.01	0.72	3.2	0.31
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	0.5	2.5	4.5	2.9
Total Nitrogen (as N)	0.2	mg/L	1.2	2.5	4.5	2.9
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.006	0.004	< 0.001	0.006
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium (filtered)	0.001	mg/L	< 0.001	0.002	< 0.001	0.003
Copper (filtered)	0.001	mg/L	0.005	< 0.001	0.003	0.009
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.002
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel (filtered)	0.001	mg/L	0.004	< 0.001	0.025	0.003
Zinc (filtered)	0.005	mg/L	0.015	0.009	0.081	0.024
Pathogens						
Thermotolerant Coliforms	1	MPN/100mL	< 1	20	680	2400
Total Coliforms	1	MPN/100mL	14	830	>24000	>24000

Client Sample ID			QC101_131120 18	QC301_131120 18	QC501_131120 18	QC302_131120 18
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	-	-	-
TRH C10-C14	0.05	mg/L	< 0.05	-	-	-
TRH C15-C28	0.1	mg/L	< 0.1	-	-	-
TRH C29-C36	0.1	mg/L	< 0.1	-	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	-	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
4-Bromofluorobenzene (surr.)	1	%	107	96	90	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	-	-	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	-	-	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	-	-	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	-	-	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	-	-	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	-	-	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	-	-	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	-	-	-
4-Chlorotoluene	0.001	mg/L	< 0.001	-	-	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	-	-	-
Allyl chloride	0.001	mg/L	< 0.001	-	-	-
Benzene	0.001	mg/L	< 0.001	-	-	-
Bromobenzene	0.001	mg/L	< 0.001	-	-	-
Bromochloromethane	0.001	mg/L	< 0.001	-	-	-
Bromodichloromethane	0.001	mg/L	< 0.001	-	-	-
Bromoform	0.001	mg/L	< 0.001	-	-	-
Bromomethane	0.001	mg/L	< 0.001	-	-	-
Carbon disulfide	0.001	mg/L	< 0.001	-	-	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	-	-	-
Chlorobenzene	0.001	mg/L	< 0.001	-	-	-
Chloroethane	0.001	mg/L	< 0.001	-	-	-
Chloroform	0.005	mg/L	< 0.005	-	-	-
Chloromethane	0.001	mg/L	< 0.001	-	-	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			QC101_131120 18	QC301_131120 18	QC501_131120 18	QC302_131120 18
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Volatile Organics						
Dibromochloromethane	0.001	mg/L	< 0.001	-	-	-
Dibromomethane	0.001	mg/L	< 0.001	-	-	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	-	-	-
Ethylbenzene	0.001	mg/L	< 0.001	-	-	-
Iodomethane	0.001	mg/L	< 0.001	-	-	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	-	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	-	-	-
Methylene Chloride	0.001	mg/L	< 0.001	-	-	-
o-Xylene	0.001	mg/L	< 0.001	-	-	-
Styrene	0.001	mg/L	< 0.001	-	-	-
Tetrachloroethene	0.001	mg/L	< 0.001	-	-	-
Toluene	0.001	mg/L	< 0.001	-	-	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	-	-	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	-	-	-
Trichloroethene	0.001	mg/L	< 0.001	-	-	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	-	-	-
Vinyl chloride	0.001	mg/L	< 0.001	-	-	-
Xylenes - Total	0.003	mg/L	< 0.003	-	-	-
Total MAH*	0.003	mg/L	< 0.003	-	-	-
Vic EPA IWRG 621 CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
Vic EPA IWRG 621 Other CHC (Total)*	0.005	mg/L	< 0.005	-	-	-
4-Bromofluorobenzene (surr.)	1	%	107	-	-	-
Toluene-d8 (surr.)	1	%	105	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene ^{N02}	0.01	mg/L	< 0.01	-	-	-
TRH C6-C10	0.02	mg/L	< 0.02	-	-	-
TRH C6-C10 less BTEX (F1) ^{N04}	0.02	mg/L	< 0.02	-	-	-
TRH >C10-C16	0.05	mg/L	< 0.05	-	-	-
TRH >C10-C16 less Naphthalene (F2) ^{N01}	0.05	mg/L	< 0.05	-	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	-	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	-	-	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	-	-	-
Acenaphthylene	0.001	mg/L	< 0.001	-	-	-
Anthracene	0.001	mg/L	< 0.001	-	-	-
Benz(a)anthracene	0.001	mg/L	< 0.001	-	-	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	-	-	-
Benzo(b&j)fluoranthene ^{N07}	0.001	mg/L	< 0.001	-	-	-
Benzo(g,h,i)perylene	0.001	mg/L	< 0.001	-	-	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	-	-	-
Chrysene	0.001	mg/L	< 0.001	-	-	-
Dibenz(a,h)anthracene	0.001	mg/L	< 0.001	-	-	-
Fluoranthene	0.001	mg/L	< 0.001	-	-	-
Fluorene	0.001	mg/L	< 0.001	-	-	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	-	-	-
Naphthalene	0.001	mg/L	< 0.001	-	-	-
Phenanthrene	0.001	mg/L	< 0.001	-	-	-
Pyrene	0.001	mg/L	< 0.001	-	-	-

Client Sample ID			QC101_131120 18	QC301_131120 18	QC501_131120 18	QC302_131120 18
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.001	mg/L	< 0.001	-	-	-
2-Fluorobiphenyl (surr.)	1	%	129	-	-	-
p-Terphenyl-d14 (surr.)	1	%	80	-	-	-
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	-	-	-
4,4'-DDD	0.0001	mg/L	< 0.0001	-	-	-
4,4'-DDE	0.0001	mg/L	< 0.0001	-	-	-
4,4'-DDT	0.0001	mg/L	< 0.0001	-	-	-
a-BHC	0.0001	mg/L	< 0.0001	-	-	-
Aldrin	0.0001	mg/L	< 0.0001	-	-	-
b-BHC	0.0001	mg/L	< 0.0001	-	-	-
d-BHC	0.0001	mg/L	< 0.0001	-	-	-
Dieldrin	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan I	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan II	0.0001	mg/L	< 0.0001	-	-	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	-	-	-
Endrin	0.0001	mg/L	< 0.0001	-	-	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	-	-	-
Endrin ketone	0.0001	mg/L	< 0.0001	-	-	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	-	-	-
Heptachlor	0.0001	mg/L	< 0.0001	-	-	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	-	-	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	-	-	-
Methoxychlor	0.0001	mg/L	< 0.0001	-	-	-
Toxaphene	0.01	mg/L	< 0.01	-	-	-
Aldrin and Dieldrin (Total)*	0.0001	mg/L	< 0.0001	-	-	-
DDT + DDE + DDD (Total)*	0.0001	mg/L	< 0.0001	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.001	mg/L	< 0.001	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.001	mg/L	< 0.001	-	-	-
Dibutylchloroendate (surr.)	1	%	78	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	106	-	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	-	-	-
Bolstar	0.002	mg/L	< 0.002	-	-	-
Chlorfenvinphos	0.002	mg/L	< 0.002	-	-	-
Chlorpyrifos	0.02	mg/L	< 0.02	-	-	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	-	-	-
Coumaphos	0.02	mg/L	< 0.02	-	-	-
Demeton-S	0.02	mg/L	< 0.02	-	-	-
Demeton-O	0.002	mg/L	< 0.002	-	-	-
Diazinon	0.002	mg/L	< 0.002	-	-	-
Dichlorvos	0.002	mg/L	< 0.002	-	-	-
Dimethoate	0.002	mg/L	< 0.002	-	-	-
Disulfoton	0.002	mg/L	< 0.002	-	-	-
EPN	0.002	mg/L	< 0.002	-	-	-
Ethion	0.002	mg/L	< 0.002	-	-	-
Ethoprop	0.002	mg/L	< 0.002	-	-	-
Ethyl parathion	0.002	mg/L	< 0.002	-	-	-
Fenitrothion	0.002	mg/L	< 0.002	-	-	-

Client Sample ID			QC101_131120 18	QC301_131120 18	QC501_131120 18	QC302_131120 18
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Fensulfothion	0.002	mg/L	< 0.002	-	-	-
Fenthion	0.002	mg/L	< 0.002	-	-	-
Malathion	0.002	mg/L	< 0.002	-	-	-
Merphos	0.002	mg/L	< 0.002	-	-	-
Methyl parathion	0.002	mg/L	< 0.002	-	-	-
Mevinphos	0.002	mg/L	< 0.002	-	-	-
Monocrotophos	0.002	mg/L	< 0.002	-	-	-
Naled	0.002	mg/L	< 0.002	-	-	-
Omethoate	0.002	mg/L	< 0.002	-	-	-
Phorate	0.002	mg/L	< 0.002	-	-	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	-	-	-
Pyrazophos	0.002	mg/L	< 0.002	-	-	-
Ronnel	0.002	mg/L	< 0.002	-	-	-
Terbufos	0.002	mg/L	< 0.002	-	-	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	-	-	-
Tokuthion	0.002	mg/L	< 0.002	-	-	-
Trichloronate	0.002	mg/L	< 0.002	-	-	-
Triphenylphosphate (surr.)	1	%	135	-	-	-
Phthalate Esters						
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	-	-	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	-	-	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	-	-	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	-	-	-
Diethyl phthalate	0.005	mg/L	< 0.005	-	-	-
Dimethyl phthalate	0.005	mg/L	< 0.005	-	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorotridecanoic acid (PFTTrDA) ^{N15}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
13C4-PFBA (surr.)	1	%	48	-	-	116
13C5-PFPeA (surr.)	1	%	59	-	-	117
13C5-PFHxA (surr.)	1	%	79	-	-	111
13C4-PFHpA (surr.)	1	%	102	-	-	132
13C8-PFOA (surr.)	1	%	113	-	-	139
13C5-PFNA (surr.)	1	%	114	-	-	138
13C6-PFDA (surr.)	1	%	98	-	-	132
13C2-PFUnDA (surr.)	1	%	81	-	-	128
13C2-PFDoDA (surr.)	1	%	59	-	-	111
13C2-PFTeDA (surr.)	1	%	17	-	-	82

Client Sample ID			QC101_131120 18	QC301_131120 18	QC501_131120 18	QC302_131120 18
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
13C8-FOSA (surr.)	1	%	70	-	-	85
D3-N-MeFOSA (surr.)	1	%	12	-	-	INT
D5-N-EtFOSA (surr.)	1	%	10	-	-	INT
D7-N-MeFOSE (surr.)	1	%	24	-	-	INT
D9-N-EtFOSE (surr.)	1	%	26	-	-	12
D5-N-EtFOSAA (surr.)	1	%	60	-	-	107
D3-N-MeFOSAA (surr.)	1	%	64	-	-	111
Perfluoroalkyl sulfonic acids (PFASs)						
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	0.01	-	-	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01	-	-	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	^{N09} 0.06	-	-	< 0.01
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01	-	-	< 0.01
13C3-PFBS (surr.)	1	%	116	-	-	128
18O2-PFHxS (surr.)	1	%	131	-	-	131
13C8-PFOS (surr.)	1	%	117	-	-	124
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05	-	-	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01	-	-	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	0.01	ug/L	< 0.01	-	-	< 0.01
13C2-4:2 FTSA (surr.)	1	%	54	-	-	74
13C2-6:2 FTSA (surr.)	1	%	81	-	-	89
13C2-8:2 FTSA (surr.)	1	%	57	-	-	95
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	0.06	-	-	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	0.06	-	-	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	0.06	-	-	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	0.07	-	-	< 0.05
Sum of PFASs (n=28)*	0.1	ug/L	< 0.1	-	-	< 0.1

Client Sample ID			QC101_13112018	QC301_13112018	QC501_13112018	QC302_13112018
Sample Matrix			Water	Water	Water	Water
Eurofins mgt Sample No.			S18-No16381	S18-No16382	S18-No16383	S18-No16384
Date Sampled			Nov 13, 2018	Nov 13, 2018	Nov 13, 2018	Nov 13, 2018
Test/Reference	LOR	Unit				
Ammonia (as N)	0.01	mg/L	2.2	-	-	-
Nitrate & Nitrite (as N)	0.05	mg/L	< 0.05	-	-	-
Nitrate (as N)	0.02	mg/L	< 0.02	-	-	-
Nitrite (as N)	0.02	mg/L	< 0.02	-	-	-
Phosphate total (as P)	0.01	mg/L	0.73	-	-	-
Total Kjeldahl Nitrogen (as N)	0.2	mg/L	2.4	-	-	-
Total Nitrogen (as N)	0.2	mg/L	2.4	-	-	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.004	-	-	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	-	-	-
Chromium (filtered)	0.001	mg/L	0.002	-	-	-
Copper (filtered)	0.001	mg/L	< 0.001	-	-	-
Lead (filtered)	0.001	mg/L	< 0.001	-	-	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	-	-	-
Nickel (filtered)	0.001	mg/L	< 0.001	-	-	-
Zinc (filtered)	0.005	mg/L	0.008	-	-	-
Pathogens						
Thermotolerant Coliforms	1	MPN/100mL	M15 < 10	-	-	-
Total Coliforms	1	MPN/100mL	1400	-	-	-

Client Sample ID			QC502_13112018
Sample Matrix			Water
Eurofins mgt Sample No.			S18-No16385
Date Sampled			Nov 13, 2018
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA) ^{N11}	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA) ^{N11}	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA) ^{N11}	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA) ^{N11}	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA) ^{N11}	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA) ^{N11}	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA) ^{N11}	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA) ^{N11}	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA) ^{N11}	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTriDA) ^{N15}	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA) ^{N11}	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	116
13C5-PFPeA (surr.)	1	%	128
13C5-PFHxA (surr.)	1	%	115
13C4-PFHpA (surr.)	1	%	135
13C8-PFOA (surr.)	1	%	142
13C5-PFNA (surr.)	1	%	141
13C6-PFDA (surr.)	1	%	135
13C2-PFUnDA (surr.)	1	%	132
13C2-PFDoDA (surr.)	1	%	111
13C2-PFTeDA (surr.)	1	%	74

Client Sample ID			QC502_13112018
Sample Matrix			Water
Eurofins mgt Sample No.			S18-No16385
Date Sampled			Nov 13, 2018
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA) ^{N11}	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA) ^{N11}	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA) ^{N11}	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE) ^{N11}	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE) ^{N11}	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA) ^{N11}	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA) ^{N11}	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	87
D3-N-MeFOSA (surr.)	1	%	INT
D5-N-EtFOSA (surr.)	1	%	INT
D7-N-MeFOSE (surr.)	1	%	10
D9-N-EtFOSE (surr.)	1	%	15
D5-N-EtFOSAA (surr.)	1	%	106
D3-N-MeFOSAA (surr.)	1	%	114
Perfluoroalkyl sulfonic acids (PFASs)			
Perfluorobutanesulfonic acid (PFBS) ^{N11}	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS) ^{N15}	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS) ^{N11}	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS) ^{N15}	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS) ^{N11}	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS) ^{N15}	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	129
18O2-PFHxS (surr.)	1	%	131
13C8-PFOS (surr.)	1	%	121
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA) ^{N11}	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA) ^{N11}	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA) ^{N11}	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA) ^{N15}	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	73
13C2-6:2 FTSA (surr.)	1	%	99
13C2-8:2 FTSA (surr.)	1	%	90
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=28)*	0.1	ug/L	< 0.1

Sample History

Where samples are submitted/analysed over several days, the last date of extraction and analysis is reported.
A recent review of our LIMS has resulted in the correction or clarification of some method identifications. Due to this, some of the method reference information on reports has changed. However, no substantive change has been made to our laboratory methods, and as such there is no change in the validity of current or previous results (regarding both quality and NATA accreditation).

If the date and time of sampling are not provided, the Laboratory will not be responsible for compromised results should testing be performed outside the recommended holding time.

Description	Testing Site	Extracted	Holding Time
Eurofins mgt Suite B7 (filtered metals)			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Melbourne	Nov 14, 2018	14 Day
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Metals M8 filtered	Melbourne	Nov 14, 2018	28 Day
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Volatile Organics	Melbourne	Nov 14, 2018	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Phthalate Esters	Melbourne	Nov 14, 2018	7 Day
- Method: USEPA 8270 Phthalate Esters			
Thermotolerant Coliforms	Melbourne	Nov 14, 2018	24 Hour
- Method: Inhouse LTM-MIC-6623: Thermotolerant Coliforms by MPN			
Total Coliforms	Melbourne	Nov 14, 2018	24 Hour
- Method: LTM-MIC-6621			
Eurofins mgt Suite B14			
Organochlorine Pesticides	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Nov 15, 2018	14 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Nov 15, 2018	14 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAAs)	Brisbane	Nov 15, 2018	14 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Nov 15, 2018	14 Day
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Eurofins mgt Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P			
Ammonia (as N)	Melbourne	Nov 14, 2018	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Nitrate & Nitrite (as N)	Melbourne	Nov 14, 2018	28 Day
- Method: APHA 4500-NO3/NO2 Nitrate-Nitrite Nitrogen by FIA			
Nitrate (as N)	Melbourne	Nov 14, 2018	28 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Nitrite (as N)	Melbourne	Nov 14, 2018	2 Day
- Method: APHA 4500-NO2 Nitrite Nitrogen by FIA			
Phosphate total (as P)	Melbourne	Nov 14, 2018	28 Day
- Method: APHA 4500-P E. Phosphorous			
Total Kjeldahl Nitrogen (as N)	Melbourne	Nov 14, 2018	7 Day
- Method: LTM-INO-4040 Phosphate and Nitrogen in waters by Continuous Flow Analysis (CFA)			

Company Name: Senversa Pty Ltd NSW
Address: Level 5, The Grafton Bond Building, 201 Kent Street
SYDNEY
NSW 2000
Project Name: PHASE 2 - DUE DILIGENCE
Project ID: S16913

Order No.:
Report #: 627467
Phone: 02 9994 8016
Fax: 03 9606 0074

Received: Nov 13, 2018 4:56 PM
Due: Nov 16, 2018
Priority: 3 Day
Contact Name: Roxanne McKinnon

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Thermotolerant Coliforms	Total Coliforms	Phthalate Esters	BTEX	Eurofins mgt Suite B14	Volatile Organics	Eurofins mgt Suite B7 (filtered metals)	Eurofins mgt Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														X
Perth Laboratory - NATA Site # 23736														
External Laboratory														
No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	MW01	Nov 13, 2018		Water	S18-No16377	X	X	X		X	X	X	X	X
2	MW03	Nov 13, 2018		Water	S18-No16378	X	X	X		X	X	X	X	X
3	MW04	Nov 13, 2018		Water	S18-No16379	X	X	X		X	X	X	X	X
4	MW05	Nov 13, 2018		Water	S18-No16380	X	X	X		X	X	X	X	X
5	QC101_13112 018	Nov 13, 2018		Water	S18-No16381	X	X	X		X	X	X	X	X
6	QC301_13112 018	Nov 13, 2018		Water	S18-No16382				X					
7	QC501_13112 018	Nov 13, 2018		Water	S18-No16383				X					

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Sample Detail						Thermotolerant Coliforms	Total Coliforms	Phthalate Esters	BTEX	Eurofins mgt Suite B14	Volatile Organics	Eurofins mgt Suite B7 (filtered metals)	Eurofins mgt Suite B19D: Total N, TKN, NOx, NO2, NO3, Total P	Per - and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	
Sydney Laboratory - NATA Site # 18217														
Brisbane Laboratory - NATA Site # 20794														X
Perth Laboratory - NATA Site # 23736														
8	QC302_13112 018	Nov 13, 2018		Water	S18-No16384									X
9	QC502_13112 018	Nov 13, 2018		Water	S18-No16385									X
Test Counts						5	5	5	2	5	5	5	5	7

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. This report replaces any interim results previously issued.

Holding Times

Please refer to 'Sample Preservation and Container Guide' for holding times (QS3001).

For samples received on the last day of holding time, notification of testing requirements should have been received at least 6 hours prior to sample receipt deadlines as stated on the SRA.

If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported.

Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

For VOCs containing vinyl chloride, styrene and 2-chloroethyl vinyl ether the holding time is 7 days however for all other VOCs such as BTEX or C6-10 TRH then the holding time is 14 days.

****NOTE:** pH duplicates are reported as a range NOT as RPD

Units

mg/kg: milligrams per kilogram

mg/L: milligrams per litre

ug/L: micrograms per litre

ppm: Parts per million

ppb: Parts per billion

%: Percentage

org/100mL: Organisms per 100 millilitres

NTU: Nephelometric Turbidity Units

MPN/100mL: Most Probable Number of organisms per 100 millilitres

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	Quality Systems Manual ver 5.1 US Department of Defense
CP	Client Parent - QC was performed on samples pertaining to this report
NCP	Non-Client Parent - QC performed on samples not pertaining to this report, QC is representative of the sequence or batch that client samples were analysed within.
TEQ	Toxic Equivalency Quotient

QC - Acceptance Criteria

RPD Duplicates: Global RPD Duplicates Acceptance Criteria is 30% however the following acceptance guidelines are equally applicable:

Results <10 times the LOR : No Limit

Results between 10-20 times the LOR : RPD must lie between 0-50%

Results >20 times the LOR : RPD must lie between 0-30%

Surrogate Recoveries: Recoveries must lie between 50-150%-Phenols & PFASs

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.1 where no positive PFAS results have been reported have been reviewed and no data was affected.

WA DWER (n=10): PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC Data General Comments

1. Where a result is reported as a less than (<), higher than the nominated LOR, this is due to either matrix interference, extract dilution required due to interferences or contaminant levels within the sample, high moisture content or insufficient sample provided.
2. Duplicate data shown within this report that states the word "BATCH" is a Batch Duplicate from outside of your sample batch, but within the laboratory sample batch at a 1:10 ratio. The Parent and Duplicate data shown is not data from your samples.
3. Organochlorine Pesticide analysis - where reporting LCS data, Toxaphene & Chlordane are not added to the LCS.
4. Organochlorine Pesticide analysis - where reporting Spike data, Toxaphene is not added to the Spike.
5. Total Recoverable Hydrocarbons - where reporting Spike & LCS data, a single spike of commercial Hydrocarbon products in the range of C12-C30 is added and it's Total Recovery is reported in the C10-C14 cell of the Report.
6. pH and Free Chlorine analysed in the laboratory - Analysis on this test must begin within 30 minutes of sampling. Therefore laboratory analysis is unlikely to be completed within holding time. Analysis will begin as soon as possible after sample receipt.
7. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of Recovery the term "INT" appears against that analyte.
8. Polychlorinated Biphenyls are spiked only using Aroclor 1260 in Matrix Spikes and LCS.
9. For Matrix Spikes and LCS results a dash " - " in the report means that the specific analyte was not added to the QC sample.
10. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/L	< 0.02			0.02	Pass	
TRH C10-C14	mg/L	< 0.05			0.05	Pass	
TRH C15-C28	mg/L	< 0.1			0.1	Pass	
TRH C29-C36	mg/L	< 0.1			0.1	Pass	
Method Blank							
BTEX							
Benzene	mg/L	< 0.001			0.001	Pass	
Toluene	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
o-Xylene	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Volatile Organics							
1.1-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.1-Dichloroethene	mg/L	< 0.001			0.001	Pass	
1.1.1-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.1.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2-Trichloroethane	mg/L	< 0.001			0.001	Pass	
1.1.2.2-Tetrachloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dibromoethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2-Dichloroethane	mg/L	< 0.001			0.001	Pass	
1.2-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.3-Trichloropropane	mg/L	< 0.001			0.001	Pass	
1.2.4-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.3-Dichloropropane	mg/L	< 0.001			0.001	Pass	
1.3.5-Trimethylbenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.001			0.001	Pass	
2-Butanone (MEK)	mg/L	< 0.001			0.001	Pass	
2-Propanone (Acetone)	mg/L	< 0.001			0.001	Pass	
4-Chlorotoluene	mg/L	< 0.001			0.001	Pass	
4-Methyl-2-pentanone (MIBK)	mg/L	< 0.001			0.001	Pass	
Allyl chloride	mg/L	< 0.001			0.001	Pass	
Benzene	mg/L	< 0.001			0.001	Pass	
Bromobenzene	mg/L	< 0.001			0.001	Pass	
Bromochloromethane	mg/L	< 0.001			0.001	Pass	
Bromodichloromethane	mg/L	< 0.001			0.001	Pass	
Bromoform	mg/L	< 0.001			0.001	Pass	
Bromomethane	mg/L	< 0.001			0.001	Pass	
Carbon disulfide	mg/L	< 0.001			0.001	Pass	
Carbon Tetrachloride	mg/L	< 0.001			0.001	Pass	
Chlorobenzene	mg/L	< 0.001			0.001	Pass	
Chloroethane	mg/L	< 0.001			0.001	Pass	
Chloroform	mg/L	< 0.005			0.005	Pass	
Chloromethane	mg/L	< 0.001			0.001	Pass	
cis-1.2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
cis-1.3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Dibromochloromethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	mg/L	< 0.001			0.001	Pass	
Ethylbenzene	mg/L	< 0.001			0.001	Pass	
Iodomethane	mg/L	< 0.001			0.001	Pass	
Isopropyl benzene (Cumene)	mg/L	< 0.001			0.001	Pass	
m&p-Xylenes	mg/L	< 0.002			0.002	Pass	
Methylene Chloride	mg/L	< 0.001			0.001	Pass	
Styrene	mg/L	< 0.001			0.001	Pass	
Tetrachloroethene	mg/L	< 0.001			0.001	Pass	
trans-1,2-Dichloroethene	mg/L	< 0.001			0.001	Pass	
trans-1,3-Dichloropropene	mg/L	< 0.001			0.001	Pass	
Trichloroethene	mg/L	< 0.001			0.001	Pass	
Trichlorofluoromethane	mg/L	< 0.001			0.001	Pass	
Vinyl chloride	mg/L	< 0.001			0.001	Pass	
Xylenes - Total	mg/L	< 0.003			0.003	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/L	< 0.01			0.01	Pass	
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
TRH >C10-C16	mg/L	< 0.05			0.05	Pass	
TRH >C16-C34	mg/L	< 0.1			0.1	Pass	
TRH >C34-C40	mg/L	< 0.1			0.1	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
Benz(a)anthracene	mg/L	< 0.001			0.001	Pass	
Benzo(a)pyrene	mg/L	< 0.001			0.001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.001			0.001	Pass	
Benzo(g,h,i)perylene	mg/L	< 0.001			0.001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.001			0.001	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
Dibenz(a,h)anthracene	mg/L	< 0.001			0.001	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
Indeno(1,2,3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.001			0.001	Pass	
4,4'-DDD	mg/L	< 0.0001			0.0001	Pass	
4,4'-DDE	mg/L	< 0.0001			0.0001	Pass	
4,4'-DDT	mg/L	< 0.0001			0.0001	Pass	
a-BHC	mg/L	< 0.0001			0.0001	Pass	
Aldrin	mg/L	< 0.0001			0.0001	Pass	
b-BHC	mg/L	< 0.0001			0.0001	Pass	
d-BHC	mg/L	< 0.0001			0.0001	Pass	
Dieldrin	mg/L	< 0.0001			0.0001	Pass	
Endosulfan I	mg/L	< 0.0001			0.0001	Pass	
Endosulfan II	mg/L	< 0.0001			0.0001	Pass	
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin	mg/L	< 0.0001			0.0001	Pass	
Endrin aldehyde	mg/L	< 0.0001			0.0001	Pass	
Endrin ketone	mg/L	< 0.0001			0.0001	Pass	
g-BHC (Lindane)	mg/L	< 0.0001			0.0001	Pass	
Heptachlor	mg/L	< 0.0001			0.0001	Pass	
Heptachlor epoxide	mg/L	< 0.0001			0.0001	Pass	
Hexachlorobenzene	mg/L	< 0.0001			0.0001	Pass	
Methoxychlor	mg/L	< 0.0001			0.0001	Pass	
Toxaphene	mg/L	< 0.01			0.01	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/L	< 0.002			0.002	Pass	
Bolstar	mg/L	< 0.002			0.002	Pass	
Chlorfenvinphos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos	mg/L	< 0.02			0.02	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.02			0.02	Pass	
Demeton-O	mg/L	< 0.002			0.002	Pass	
Diazinon	mg/L	< 0.002			0.002	Pass	
Dichlorvos	mg/L	< 0.002			0.002	Pass	
Dimethoate	mg/L	< 0.002			0.002	Pass	
Disulfoton	mg/L	< 0.002			0.002	Pass	
EPN	mg/L	< 0.002			0.002	Pass	
Ethion	mg/L	< 0.002			0.002	Pass	
Ethoprop	mg/L	< 0.002			0.002	Pass	
Ethyl parathion	mg/L	< 0.002			0.002	Pass	
Fenitrothion	mg/L	< 0.002			0.002	Pass	
Fensulfothion	mg/L	< 0.002			0.002	Pass	
Fenthion	mg/L	< 0.002			0.002	Pass	
Malathion	mg/L	< 0.002			0.002	Pass	
Merphos	mg/L	< 0.002			0.002	Pass	
Methyl parathion	mg/L	< 0.002			0.002	Pass	
Mevinphos	mg/L	< 0.002			0.002	Pass	
Monocrotophos	mg/L	< 0.002			0.002	Pass	
Naled	mg/L	< 0.002			0.002	Pass	
Omethoate	mg/L	< 0.002			0.002	Pass	
Phorate	mg/L	< 0.002			0.002	Pass	
Pirimiphos-methyl	mg/L	< 0.02			0.02	Pass	
Pyrazophos	mg/L	< 0.002			0.002	Pass	
Ronnel	mg/L	< 0.002			0.002	Pass	
Terbufos	mg/L	< 0.002			0.002	Pass	
Tetrachlorvinphos	mg/L	< 0.002			0.002	Pass	
Tokuthion	mg/L	< 0.002			0.002	Pass	
Trichloronate	mg/L	< 0.002			0.002	Pass	
Method Blank							
Phthalate Esters							
Bis(2-ethylhexyl)phthalate	mg/L	< 0.005			0.005	Pass	
Butyl benzyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-butyl phthalate	mg/L	< 0.005			0.005	Pass	
Di-n-octyl phthalate	mg/L	< 0.005			0.005	Pass	
Diethyl phthalate	mg/L	< 0.005			0.005	Pass	
Dimethyl phthalate	mg/L	< 0.005			0.005	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSA's)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Nitrate & Nitrite (as N)	mg/L	< 0.05			0.05	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Nitrite (as N)	mg/L	< 0.02			0.02	Pass	
Phosphate total (as P)	mg/L	< 0.01			0.01	Pass	
Total Kjeldahl Nitrogen (as N)	mg/L	< 0.2			0.2	Pass	
Method Blank							
Heavy Metals							
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	127			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	99			70-130	Pass	
Toluene	%	93			70-130	Pass	
Ethylbenzene	%	103			70-130	Pass	
m&p-Xylenes	%	96			70-130	Pass	
Xylenes - Total	%	95			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	71			70-130	Pass	
1.1.1-Trichloroethane	%	84			70-130	Pass	
1.2-Dichlorobenzene	%	98			70-130	Pass	
1.2-Dichloroethane	%	83			70-130	Pass	
Trichloroethene	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	82			70-130	Pass	
TRH C6-C10	%	117			70-130	Pass	
TRH >C10-C16	%	125			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	79			70-130	Pass	
Acenaphthylene	%	96			70-130	Pass	
Anthracene	%	92			70-130	Pass	
Benz(a)anthracene	%	104			70-130	Pass	
Benzo(a)pyrene	%	117			70-130	Pass	
Benzo(b&j)fluoranthene	%	113			70-130	Pass	
Benzo(g,h,i)perylene	%	104			70-130	Pass	
Benzo(k)fluoranthene	%	110			70-130	Pass	
Chrysene	%	99			70-130	Pass	
Dibenz(a,h)anthracene	%	95			70-130	Pass	
Fluoranthene	%	105			70-130	Pass	
Fluorene	%	93			70-130	Pass	
Indeno(1,2,3-cd)pyrene	%	77			70-130	Pass	
Naphthalene	%	80			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	106			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	101			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Fenitrothion	%	90			70-130	Pass	
Methyl parathion	%	90			70-130	Pass	
Mevinphos	%	116			70-130	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	96			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	92			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	94			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	99			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	96			50-150	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorodecanoic acid (PFDA)			%	95			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)			%	94			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)			%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)			%	59			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)			%	97			50-150	Pass	
LCS - % Recovery									
Perfluoroalkyl sulfonamido substances									
Perfluorooctane sulfonamide (FOSA)			%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)			%	90			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)			%	97			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)			%	101			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)			%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)			%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)			%	102			50-150	Pass	
LCS - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)									
Perfluorobutanesulfonic acid (PFBS)			%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)			%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)			%	88			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)			%	84			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	94			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	69			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	96			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)			%	99			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	89			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	59			50-150	Pass	
LCS - % Recovery									
Ammonia (as N)			%	100			70-130	Pass	
Nitrate & Nitrite (as N)			%	100			70-130	Pass	
Nitrate (as N)			%	100			70-130	Pass	
Nitrite (as N)			%	108			70-130	Pass	
Phosphate total (as P)			%	77			70-130	Pass	
Total Kjeldahl Nitrogen (as N)			%	96			70-130	Pass	
LCS - % Recovery									
Heavy Metals									
Arsenic (filtered)			%	96			80-120	Pass	
Cadmium (filtered)			%	95			80-120	Pass	
Chromium (filtered)			%	96			80-120	Pass	
Copper (filtered)			%	97			80-120	Pass	
Lead (filtered)			%	99			80-120	Pass	
Mercury (filtered)			%	88			70-130	Pass	
Nickel (filtered)			%	96			80-120	Pass	
Zinc (filtered)			%	98			80-120	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	M18-No13554	NCP	%	110			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	M18-No13554	NCP	%	110			70-130	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
				Result 1					
Ammonia (as N)	M18-No16135	NCP	%	87			70-130	Pass	
Nitrate & Nitrite (as N)	M18-No16135	NCP	%	92			70-130	Pass	
Nitrate (as N)	M18-No16135	NCP	%	92			70-130	Pass	
Nitrite (as N)	M18-No16135	NCP	%	96			70-130	Pass	
Total Kjeldahl Nitrogen (as N)	B18-No16280	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic (filtered)	S18-No16377	CP	%	95			70-130	Pass	
Cadmium (filtered)	S18-No16377	CP	%	91			70-130	Pass	
Chromium (filtered)	S18-No16377	CP	%	93			70-130	Pass	
Copper (filtered)	S18-No16377	CP	%	93			70-130	Pass	
Lead (filtered)	S18-No16377	CP	%	94			70-130	Pass	
Mercury (filtered)	M18-No15167	NCP	%	95			70-130	Pass	
Nickel (filtered)	S18-No16377	CP	%	93			70-130	Pass	
Zinc (filtered)	S18-No16377	CP	%	96			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S18-No16385	CP	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S18-No16385	CP	%	100			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S18-No16385	CP	%	93			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S18-No16385	CP	%	101			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S18-No16385	CP	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	S18-No16385	CP	%	96			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S18-No16385	CP	%	95			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S18-No16385	CP	%	98			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S18-No16385	CP	%	94			50-150	Pass	
Perfluorotridecanoic acid (PFTTrDA)	S18-No16385	CP	%	111			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S18-No16385	CP	%	94			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S18-No16385	CP	%	101			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No16385	CP	%	95			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No16385	CP	%	103			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No16385	CP	%	106			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No16385	CP	%	103			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No16385	CP	%	94			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No16385	CP	%	97			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S18-No16385	CP	%	87			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S18-No16385	CP	%	90			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S18-No16385	CP	%	91			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptanesulfonic acid (PFHpS)	S18-No16385	CP	%	93			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S18-No16385	CP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S18-No16385	CP	%	83			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No16385	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No16385	CP	%	94			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No16385	CP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No16385	CP	%	137			50-150	Pass	
Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M18-No10915	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	M18-No13553	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	M18-No13553	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	M18-No13553	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M18-No10915	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M18-No10915	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate								
Volatile Organics				Result 1	Result 2	RPD		
Allyl chloride	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromobenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromochloromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromodichloromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromoform	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Bromomethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon disulfide	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Carbon Tetrachloride	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chlorobenzene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chloroform	M18-No10915	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass
Chloromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1,2-Dichloroethene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
cis-1,3-Dichloropropene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromochloromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibromomethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dichlorodifluoromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Iodomethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Isopropyl benzene (Cumene)	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Methylene Chloride	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Styrene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Tetrachloroethene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1,2-Dichloroethene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
trans-1,3-Dichloropropene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichloroethene	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Trichlorofluoromethane	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Vinyl chloride	M18-No10915	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	M18-No10915	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass
TRH C6-C10	M18-No10915	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
TRH >C10-C16	M18-No13553	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
TRH >C16-C34	M18-No13553	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
TRH >C34-C40	M18-No13553	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Acenaphthylene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Anthracene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benz(a)anthracene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(a)pyrene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(b&j)fluoranthene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(g,h,i)perylene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Benzo(k)fluoranthene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Chrysene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Dibenz(a,h)anthracene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluoranthene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Fluorene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Indeno(1,2,3-cd)pyrene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Naphthalene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Phenanthrene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Pyrene	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass

Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	M18-No09606	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass
4,4'-DDD	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4,4'-DDE	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
4,4'-DDT	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
a-BHC	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Aldrin	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
b-BHC	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
d-BHC	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Dieldrin	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan I	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan II	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endosulfan sulphate	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin aldehyde	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Endrin ketone	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
g-BHC (Lindane)	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Heptachlor epoxide	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Methoxychlor	M18-No09606	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Bolstar	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorfenvinphos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Chlorpyrifos	M18-No09606	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Chlorpyrifos-methyl	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Coumaphos	M18-No09606	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-S	M18-No09606	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Demeton-O	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Diazinon	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dichlorvos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Dimethoate	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Disulfoton	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
EPN	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethoprop	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ethyl parathion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenitrothion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fensulfathion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Fenthion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Malathion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Merphos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Methyl parathion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Mevinphos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Monocrotophos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Naled	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Omethoate	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Phorate	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Pirimiphos-methyl	M18-No09606	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Pyrazophos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Ronnel	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Terbufos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tetrachlorvinphos	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Tokuthion	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass
Trichloronate	M18-No09606	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S18-No16368	NCP	ug/L	0.01	0.01	2.0	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSA's)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S18-No16368	NCP	ug/L	0.01	0.01	9.0	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S18-No16368	NCP	ug/L	0.11	0.10	10	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA's)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No16368	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No16368	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Duplicate								
				Result 1	Result 2	RPD		
Ammonia (as N)	M18-No16135	NCP	mg/L	0.95	0.98	3.0	30%	Pass
Nitrate & Nitrite (as N)	M18-No16135	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass
Nitrate (as N)	M18-No16135	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Nitrite (as N)	M18-No16135	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass
Phosphate total (as P)	S18-No16377	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass
Total Kjeldahl Nitrogen (as N)	S18-No16377	CP	mg/L	0.5	0.4	10	30%	Pass
Duplicate								
Heavy Metals				Result 1	Result 2	RPD		
Arsenic (filtered)	S18-No16377	CP	mg/L	0.006	0.005	4.0	30%	Pass
Cadmium (filtered)	S18-No16377	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass
Chromium (filtered)	S18-No16377	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Copper (filtered)	S18-No16377	CP	mg/L	0.005	0.005	1.0	30%	Pass
Lead (filtered)	S18-No16377	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass
Mercury (filtered)	S18-No16377	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass
Nickel (filtered)	S18-No16377	CP	mg/L	0.004	0.004	1.0	30%	Pass
Zinc (filtered)	S18-No16377	CP	mg/L	0.015	0.015	2.0	30%	Pass
Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorobutanoic acid (PFBA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Perfluoropentanoic acid (PFPeA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanoic acid (PFHxA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanoic acid (PFHpA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanoic acid (PFOA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass

Duplicate								
Perfluoroalkyl sulfonic acids (PFASs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSA)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S18-No16384	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S18-No16384	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Comments

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	Yes
Sample correctly preserved	Yes
Appropriate sample containers have been used	Yes
Sample containers for volatile analysis received with minimal headspace	Yes
Samples received within HoldingTime	Yes
Some samples have been subcontracted	No

Qualifier Codes/Comments

Code	Description
G01	The LORs have been raised due to matrix interference
M15	LOR raised due to physical properties of sample
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N09	Quantification of linear and branched isomers has been conducted as a single total response using the relative response factor for the corresponding linear/branched standard.
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised By

Nibha Vaidya	Analytical Services Manager
Chris Bennett	Senior Analyst-Metal (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Jonathon Angell	Senior Analyst-Organic (QLD)
Joseph Edouard	Senior Analyst-Organic (VIC)
Julie Kay	Senior Analyst-Inorganic (VIC)
Nandhini Uthayakumaran	Senior Analyst-Microbiology (VIC)



Glenn Jackson

General Manager

Final report - this Report replaces any previously issued Report

- Indicates Not Requested

* Indicates NATA accreditation does not cover the performance of this service

Measurement uncertainty of test data is available on request or please [click here](#).

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CERTIFICATE OF ANALYSIS

Work Order	: ES1832601	Page	: 1 of 7
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 01-Nov-2018 15:23
Order number	: ----	Date Analysis Commenced	: 07-Nov-2018
C-O-C number	: ----	Issue Date	: 13-Nov-2018 11:53
Sampler	: ALICIA CRONLY		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC201_0.8-0.9	----	----	----	----
Client sampling date / time				30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1832601-001	-----	-----	-----	-----
Result				----	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	12.4	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	8	----	----	----	----
Copper	7440-50-8	5	mg/kg	15	----	----	----	----
Lead	7439-92-1	5	mg/kg	9	----	----	----	----
Nickel	7440-02-0	2	mg/kg	35	----	----	----	----
Zinc	7440-66-6	5	mg/kg	39	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201_0.8-0.9	----	----	----	----
Client sampling date / time					30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832601-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201_0.8-0.9	----	----	----	----
Client sampling date / time					30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832601-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC201_0.8-0.9	----	----	----	----
Client sampling date / time					30-Oct-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1832601-001	-----	-----	-----	-----
				Result		----	----	----	----
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg		<0.2	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg		<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg		<1	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%		94.6	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%		117	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%		64.8	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		83.3	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		86.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		71.1	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		80.9	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		96.8	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		85.5	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		97.1	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		105	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		104	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: ES1832601	Page	: 1 of 10
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 01-Nov-2018
Order number	: ----	Date Analysis Commenced	: 07-Nov-2018
C-O-C number	: ----	Issue Date	: 13-Nov-2018
Sampler	: ALICIA CRONLY		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2024030)									
ES1832702-002	Anonymous	EA055: Moisture Content	----	0.1	%	11.4	10.8	5.67	0% - 20%
ES1832942-010	Anonymous	EA055: Moisture Content	----	0.1	%	17.0	16.4	3.38	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2027144)									
ES1832601-001	QC201_0.8-0.9	EG005T: Zinc	7440-66-6	5	mg/kg	39	38	2.79	No Limit
ES1832951-012	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	23	11.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	12	17.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	12	45.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	18	11.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	18	34.8	No Limit
ES1832601-001	QC201_0.8-0.9	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	35	28	19.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	15	13	14.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	13.9	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2027145)									
ES1832951-012	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1832601-001	QC201_0.8-0.9	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2022447)									
EP1812839-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2022446)									
EP1812839-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2022446) - continued									
EP1812839-001	Anonymous	EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2022446)									
EP1812839-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<1.0	<1.0	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2022449)									
ES1832975-010	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP1812839-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Page : 5 of 10
 Work Order : ES1832601
 Client : SENVERSA PTY LTD
 Project : S16913 Phase 2 Due Diligence



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2022448)									
ES1832975-010	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP1812839-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	5270	5100	3.18	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	1990	1910	4.12	0% - 50%
		EP071: C10 - C14 Fraction	----	50	mg/kg	1160	1070	7.47	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2022812)									
ES1832601-001	QC201_0.8-0.9	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1832975-020	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2022448)									
ES1832975-010	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP1812839-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	5400	5300	1.91	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	1280	1200	6.86	0% - 50%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	2350	2300	2.50	0% - 20%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2022812)									
ES1832601-001	QC201_0.8-0.9	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1832975-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 2022812)									
ES1832601-001	QC201_0.8-0.9	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
ES1832975-020	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

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

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report				
	Spike Concentration	Spike Recovery (%)	Recovery Limits (%)		
		LCS	Low	High	
Result					
<5	21.7 mg/kg	99.6	86	126	
<1	4.64 mg/kg	103	83	113	
<2	43.9 mg/kg	96.2	76	128	
<5	32 mg/kg	99.7	86	120	
<5	40 mg/kg	105	80	114	
<2	55 mg/kg	106	87	123	
<5	60.8 mg/kg	111	80	122	
<0.1	2.57 mg/kg	76.2	70	105	
<0.1	1 mg/kg	104	62	126	
<0.05	0.5 mg/kg	94.0	69	113	
<0.05	0.5 mg/kg	92.2	65	117	
<0.05	0.5 mg/kg	88.6	67	119	
<0.05	0.5 mg/kg	96.7	68	116	
<0.05	0.5 mg/kg	90.7	65	117	
<0.05	0.5 mg/kg	97.0	67	115	
<0.05	0.5 mg/kg	97.2	69	115	
<0.05	0.5 mg/kg	88.7	62	118	
<0.05	0.5 mg/kg	84.5	63	117	
<0.05	0.5 mg/kg	90.4	66	116	
<0.05	0.5 mg/kg	84.1	64	116	
<0.05	0.5 mg/kg	88.4	66	116	
<0.05	0.5 mg/kg	89.1	67	115	
<0.05	0.5 mg/kg	84.0	67	123	
<0.05	0.5 mg/kg	87.5	69	115	
<0.05	0.5 mg/kg	87.2	69	121	
<0.05	0.5 mg/kg	101	56	120	
<0.05	0.5 mg/kg	95.3	62	124	
<0.2	0.5 mg/kg	80.5	66	120	
<0.05	0.5 mg/kg	90.6	64	122	
<0.2	0.5 mg/kg	82.0	54	130	



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2022446) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	78.1	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	84.9	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.5	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	81.4	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	78.2	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	62.7	41	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2022449)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	83.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	81.1	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	88.6	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	83.3	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	84.6	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.5	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.2	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	87.5	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	78.6	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	83.8	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	78.0	68	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	90.0	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	86.1	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.5	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	87.3	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	86.0	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022448)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	106	75	129

Method Blank (MB) Report

Spike

Spike Recovery (%)

Recovery Limits (%)

Matrix Spike (MS) Report

Sub-Matrix: **SOIL**

Matrix Spike (MS) Report

Spike

<i>SpikeRecovery</i> (%)
100
90
80
70
60
50
40
30
20
10
0

Recovery Limits (%)

Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2027144)							
ES1832601-001	QC201_0.8-0.9	EG005T: Arsenic	7440-38-2	50 mg/kg	95.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	108	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	114	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	86.3	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2027145)							
ES1832601-001	QC201_0.8-0.9	EG035T: Mercury	7439-97-6	5 mg/kg	88.9	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2022447)							



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2022447) - continued							
EP1812839-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2022446)							
EP1812839-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	77.4	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	89.6	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	77.2	70	130
		EP068: Endrin	72-20-8	2 mg/kg	75.8	70	130
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	77.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2022446)							
EP1812839-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	79.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	85.3	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	71.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	71.8	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	77.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2022449)							
EP1812839-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.5	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	86.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022448)							
EP1812839-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	88.6	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	102	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	108	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022812)							
ES1832601-001	QC201_0.8-0.9	EP080: C6 - C9 Fraction	----	32.5 mg/kg	114	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2022448)							
EP1812839-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	87.4	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	111	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	108	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2022812)							
ES1832601-001	QC201_0.8-0.9	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	115	70	130
EP080: BTEXN (QCLot: 2022812)							
ES1832601-001	QC201_0.8-0.9	EP080: Benzene	71-43-2	2.5 mg/kg	98.2	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	99.5	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.4	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	95.3	70	130
			106-42-3				
	EP080: ortho-Xylene	95-47-6	2.5 mg/kg	99.9	70	130	



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2022812) - continued							
ES1832601-001	QC201_0.8-0.9	EP080: Naphthalene	91-20-3	2.5 mg/kg	87.9	70	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1832601	Page	: 1 of 5
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 01-Nov-2018
Site	: ----	Issue Date	: 13-Nov-2018
Sampler	: ALICIA CRONLY	No. of samples received	: 1
Order number	:	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC201_0.8-0.9	30-Oct-2018	----	----	----	07-Nov-2018	13-Nov-2018	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC201_0.8-0.9	30-Oct-2018	09-Nov-2018	28-Apr-2019	✓	09-Nov-2018	28-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC201_0.8-0.9	30-Oct-2018	09-Nov-2018	27-Nov-2018	✓	09-Nov-2018	27-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC201_0.8-0.9	30-Oct-2018	07-Nov-2018	13-Nov-2018	✓	09-Nov-2018	13-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC201_0.8-0.9	30-Oct-2018	07-Nov-2018	13-Nov-2018	✓	09-Nov-2018	13-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC201_0.8-0.9	30-Oct-2018	08-Nov-2018	13-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓



Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC201_0.8-0.9	30-Oct-2018	07-Nov-2018	13-Nov-2018	✔	09-Nov-2018	13-Nov-2018	✔



Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected		Evaluation
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	12	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

625312

Laboratory: Evn

Address: **Moff**

Phone: 714/952-1100

Job Number:	Project Name:	Sampled By:	Project Manager:	Email Report To:	Sample Information	Purchase Order:	Quote No:	Turn Around Time:	Page:	Phone/Mobile:
S16913	Phase 2 Due Diligence	Alicia Crawly	Roxanne McKinnon	See pg 1					2 of 2	0432 878 912
Lab ID	Sample ID	Matrix *	Date	Time	Type / Code	Total Bottles				
	TP108-0.4-0.5	Soil	30/10/18	pm	Glass Jar	1				
	TP109-0.1-0.2									
	TP109-0.4-0.5									
	TP101-SS			AM	Bag	1				
	TP102-SS									
	TP105-SS									
	TP107-0.6-0.7			pm						
	TP101-SS									
	SS05-F	Fragment								
	SS06-F									
	SP172-F			AM						
	SP-X									
	QC102-0.8-0.9	Soil			Glass Jar					
	QC202-0.8-0.9									
	QC102-0.0-0.1				Bag					
	QC202-0.0-0.1									
	QC302-30102018	Soil		pm	Vial	1				
	QC402-30102018	Soil			Vial	1				
	QC501-30102018	Water			Vial/Bottle	3				

VIU/DMC	Date	Time	Location	Project	Notes
Sampler: latest that proper field sampling procedures in accordance with Senversa standard procedures and/or project specifications were used during the collection of these samples:					

Relinquished By:						A.Cromy									Date:	30-10-18			
Name/Signature:						Alicia Cromy									Signature:			[Signature]	
Of:						SENVORSA									Received by:			[Signature]	
							Method of Shipment (if applicable):												
							Carrier / Reference #:												
							Date:	30/10/18			Name/Signature:		JUAN D					Date:	30/10/18
							Time:	4pm			Of:		EUKROTAS NGF					Time:	4:35 PM
							Date:				Name/Signature:		SEP [Signature]					Date:	01/11/18
							Time:				Of:		ALS LOHAS NEST					Time:	1523 18°C
							Date:				Name/Signature:		JUSTIN					Date:	11/11/18
							Time:				Of:		ALS Smithfield					Time:	7:20pm
Water Containher Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO_3) Preserved Plastic; ORC = Nitric Hydroxide (NaOH /Cadmium (Cd) Preserved); S = Sodium Hydrosulfate Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar 																			
Completed by: _____ Checked by: _____																			

Completed by: _____
Checked by: _____

Senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Chain of Custody Documentation

625342

Job Number: S16913
Project Name: Phase 2 Due Diligence
Sampled By: Alicia Crumly
Project Manager: Roxanne McLinn
Email Report to: See pg 1

Purchase Order:
Quote No.:
Turn Around Time: Standard
Page: 2 of 2
Phone/Mobile: 0432 878 912

Lab ID	Sample ID	Matrix *	Date	Time	Container Information	Total Bottles
TP108-04-0.5	Soil	30/10/18	PM	Glass Jar	1	X
TP109-01-1.2						
TP109-04-0.5						
TP101-SS			AM	Bag	1	
TP102-SS						
TP105-SS						
TP107-0.4-0.1			PM			
TP107-SS						
TP108-SS						
SS05-F	Fragment					
SS06-F						
SP12-F			PM			
SO-X						
QC101-0.8-0.1	Soil			Glass Jar	1	
QC201-0.8-0.1						
QC102-0.0-0.1				Bag	1	
QC202-0.0-0.1						
QC301-3002018	Soil		PM	Vial	1	
QC401-3002018	Soil			Vial	1	
QC501-3002018	Water			Vial/Bottle	3	

Relinquished By: A. Crumly
Name/Signature: Alicia Crumly
Date: 30/10/18
Time: 4pm
Method of Shipment (if applicable):
Carrier / Reference #:
Date/Time:
Carrier / Reference #:
Date/Time:
Carrier / Reference #:
Date/Time:

Received By: Alicia Crumly
Name/Signature: Alicia Crumly
Date: 30-10-18
Time: 7:20pm

Comments: e.g. Highly contaminated sample hazardous materials present; trace LORs etc.
 Analysis to be scheduled in next 48hrs (for samples on HOLD)
 Please keep cool

Environmental Division
 Sydney
 Work Order Reference
 ES18332601

Telephone : + 61-2-8784 8555

FOLLOWED TO ALS-Sm. H&M

12/11/18

Loren Schiavon

From: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Sent: Tuesday, 6 November 2018 12:57 PM
To: Loren Schiavon
Cc: Ian Batterley
Subject: RE: S16913

Hi Loren,

Thanks for touching base. Could you please schedule analysis as follows;

TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals

① • QC201

• QC203

• QC205

PFAS

• QC204

Cheers,

Roxanne McKinnon
Environmental Scientist

Senversa

Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent Street, Sydney NSW 2000
m: 0439 206 653 | e: roxanne.mckinnon@senversa.com.au
t: +61 2 8252 0000 | w: www.senversa.com.au | www.linkedin.com/company/senversa

From: Loren Schiavon <loren.schiavon@alsglobal.com>
Sent: Monday, 5 November 2018 5:27 PM
To: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Cc: Ian Batterley <ian.batterley@senversa.com.au>
Subject: S16913

Hi Roxanne.

CERTIFICATE OF ANALYSIS

Work Order	: ES1832702	Page	: 1 of 9
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 02-Nov-2018 12:17
Order number	: ----	Date Analysis Commenced	: 07-Nov-2018
C-O-C number	: ----	Issue Date	: 13-Nov-2018 11:54
Sampler	: ALICIA CRONLY		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 2		
No. of samples analysed	: 2		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time					31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832702-001	ES1832702-002	-----	-----	-----
					Result	Result	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)									
Moisture Content	----	0.1	%		----	11.4	----	----	----
Moisture Content	----	1.0	%		13.6	----	----	----	----
EG005T: Total Metals by ICP-AES									
Arsenic	7440-38-2	5	mg/kg		6	----	----	----	----
Cadmium	7440-43-9	1	mg/kg		<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg		13	----	----	----	----
Copper	7440-50-8	5	mg/kg		11	----	----	----	----
Lead	7439-92-1	5	mg/kg		42	----	----	----	----
Nickel	7440-02-0	2	mg/kg		3	----	----	----	----
Zinc	7440-66-6	5	mg/kg		40	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS									
Mercury	7439-97-6	0.1	mg/kg		<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)									
Total Polychlorinated biphenyls	----	0.1	mg/kg		<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.05	mg/kg		<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg		<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg		<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg		<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg		<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg		<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg		<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg		<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg		<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg		<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg		<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg		<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg		<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg		<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg		<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg		<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg		<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg		<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time					31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832702-001	ES1832702-002	-----	-----	-----
				Result	Result		----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----	----
4.4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	0.8	----	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	0.9	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time					31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832702-001	ES1832702-002	-----	-----	-----
				Result	Result		----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Pyrene	129-00-0	0.5	mg/kg		0.7	----	----	----	----
Benzo(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg		2.4	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg		<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg		0.6	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg		1.2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg		<50	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time				31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES1832702-001	ES1832702-002	-----	-----	-----	
				Result	Result	----	----	----	
EP080: BTEXN - Continued									
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----	
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----	
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----	
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----	
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.0002	mg/kg	----	0.0003	----	----	----	
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.0002	mg/kg	----	0.0012	----	----	----	
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.0002	mg/kg	----	<0.0002	----	----	----	
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.001	mg/kg	----	<0.001	----	----	----	
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorohexanoic acid (PFHxA)	307-24-4	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorooctanoic acid (PFOA)	335-67-1	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorononanoic acid (PFNA)	375-95-1	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorodecanoic acid (PFDA)	335-76-2	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.0002	mg/kg	----	<0.0002	----	----	----	
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.0005	mg/kg	----	<0.0005	----	----	----	
EP231C: Perfluoroalkyl Sulfonamides									

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time				31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----	
Compound	CAS Number	LOR	Unit	ES1832702-001	ES1832702-002	-----	-----	-----	
				Result	Result	----	----	----	
EP231C: Perfluoroalkyl Sulfonamides - Continued									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.0002	mg/kg	----	<0.0002	----	----	----	
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.0005	mg/kg	----	<0.0005	----	----	----	
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.0005	mg/kg	----	<0.0005	----	----	----	
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.0005	mg/kg	----	<0.0005	----	----	----	
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.0005	mg/kg	----	<0.0005	----	----	----	
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.0002	mg/kg	----	<0.0002	----	----	----	
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.0002	mg/kg	----	<0.0002	----	----	----	
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.0005	mg/kg	----	<0.0005	----	----	----	
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.0005	mg/kg	----	<0.0005	----	----	----	
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.0005	mg/kg	----	<0.0005	----	----	----	
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.0005	mg/kg	----	<0.0005	----	----	----	
EP231P: PFAS Sums									
Sum of PFAS	----	0.0002	mg/kg	----	0.0015	----	----	----	
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.0002	mg/kg	----	0.0015	----	----	----	
Sum of PFAS (WA DER List)	----	0.0002	mg/kg	----	0.0015	----	----	----	
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	101	----	----	----	----	
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	140	----	----	----	----	
EP068T: Organophosphorus Pesticide Surrogate									



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC203_0.2-0.3	QC204_1.1-1.2	----	----	----
Client sampling date / time					31-Oct-2018 00:00	31-Oct-2018 00:00	----	----	----
Compound	CAS Number	LOR	Unit		ES1832702-001	ES1832702-002	-----	-----	-----
					Result	Result	----	----	----
EP068T: Organophosphorus Pesticide Surrogate - Continued									
DEF	78-48-8	0.05	%		79.9	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%		79.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%		82.6	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%		63.5	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%		76.9	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%		91.5	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%		83.6	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%		104	----	----	----	----
Toluene-D8	2037-26-5	0.2	%		112	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%		111	----	----	----	----
EP231S: PFAS Surrogate									
13C4-PFOS	----	0.0002	%		----	106	----	----	----
13C8-PFOA	----	0.0002	%		----	93.5	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1832702	Page	: 1 of 6
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 02-Nov-2018
Site	: ----	Issue Date	: 13-Nov-2018
Sampler	: ALICIA CRONLY	No. of samples received	: 2
Order number	: ----	No. of samples analysed	: 2

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
HDPE Soil Jar (EA055) QC204_1.1-1.2	31-Oct-2018	----	----	----	07-Nov-2018	14-Nov-2018	✓
Soil Glass Jar - Unpreserved (EA055) QC203_0.2-0.3	31-Oct-2018	----	----	----	07-Nov-2018	14-Nov-2018	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC203_0.2-0.3	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	29-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC203_0.2-0.3	31-Oct-2018	09-Nov-2018	28-Nov-2018	✓	09-Nov-2018	28-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC203_0.2-0.3	31-Oct-2018	07-Nov-2018	14-Nov-2018	✓	09-Nov-2018	14-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓



Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC203_0.2-0.3	31-Oct-2018	07-Nov-2018	14-Nov-2018	✓	09-Nov-2018	14-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC203_0.2-0.3	31-Oct-2018	08-Nov-2018	14-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC203_0.2-0.3	31-Oct-2018	07-Nov-2018	14-Nov-2018	✓	09-Nov-2018	14-Nov-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE Soil Jar (EP231X) QC204_1.1-1.2	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	19-Dec-2018	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE Soil Jar (EP231X) QC204_1.1-1.2	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	19-Dec-2018	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE Soil Jar (EP231X) QC204_1.1-1.2	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	19-Dec-2018	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE Soil Jar (EP231X) QC204_1.1-1.2	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	19-Dec-2018	✓
EP231P: PFAS Sums							
HDPE Soil Jar (EP231X) QC204_1.1-1.2	31-Oct-2018	09-Nov-2018	29-Apr-2019	✓	09-Nov-2018	19-Dec-2018	✓



Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected		Evaluation
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	16	12.50	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	12	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	16	6.25	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	SOIL	In-House. A portion of soil is extracted with MTBE. The extract is taken to dryness, made up in mobile phase. Analysis is by LC/MSMS, ESI Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1

Preparation Methods	Method	Matrix	Method Descriptions



Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Sample Extraction for PFAS	EP231-PR	SOIL	In house
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES1832702

Client : SENVERSA PTY LTD Contact : ROXANNE MCKINNON Address : Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000 E-mail : roxanne.mckinnon@senversa.com.au Telephone : ---- Facsimile : ---- Project : S16913 Phase 2 Due Diligence Order number : ---- C-O-C number : ---- Site : ---- Sampler : ALICIA CRONLY	Laboratory : Environmental Division Sydney Contact : Larissa Burns Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Larissa.burns@alsglobal.com Telephone : +6138549 9644 Facsimile : +61-2-8784 8500 Page : 1 of 3 Quote number : EM2017SENV0009 (EN/333 (secondary work only)) QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 02-Nov-2018 12:17	Issue Date : 06-Nov-2018
Client Requested Due Date : 12-Nov-2018	Scheduled Reporting Date : 12-Nov-2018

Delivery Details

Mode of Delivery : Carrier	Security Seal : Intact.
No. of coolers/boxes : 1	Temperature : 6.1°C - Ice present
Receipt Detail :	No. of samples received / analysed : 2 / 2

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - EP231X (solids) PFAS - Full Suite (28 analytes)	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES1832702-001	31-Oct-2018 00:00	QC203_0.2-0.3	✓		✓
ES1832702-002	31-Oct-2018 00:00	QC204_1.1-1.2	✓	✓	

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ALICIA CRONLY

- *AU Certificate of Analysis - NATA (COA)	Email	alicia.cronly@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	alicia.cronly@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	alicia.cronly@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	alicia.cronly@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	alicia.cronly@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	alicia.cronly@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	alicia.cronly@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	alicia.cronly@senversa.com.au

IAN BATTERLEY

- *AU Certificate of Analysis - NATA (COA)	Email	ian.batterley@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ian.batterley@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ian.batterley@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ian.batterley@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	ian.batterley@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	ian.batterley@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	ian.batterley@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	ian.batterley@senversa.com.au

ROXANNE MCKINNON

- *AU Certificate of Analysis - NATA (COA)	Email	roxanne.mckinnon@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	roxanne.mckinnon@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	roxanne.mckinnon@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	roxanne.mckinnon@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

sonversa

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www.sonversa.com.au

ABN 89 132 231 380

lan.batterley@sonversa.com.au

roxanne.mckinnon@sonversa.com.au

Laboratory: EUGOFINS MCT
Address: MARKS ROAD, LANG COVE
Contact: NIGHA VAIDYA

Chain of Custody Documentation

Job Number: **516913**
Project Name: **Phase 2 One Billion**
Sampled By: **Alicia Crabb**
Project Manager: **Roxanne McKinnon**
Email Report To: **alicia.crabb@sonversa.com.au**
Purchase Order:
Quote No: **2020-000000**
Turn Around Time: **Standard**
Page: **1 of 2**
Phone/Mobile: **0432 878 812**

Sample Information			Container Information		
Lab ID	Sample ID	Matrix	Date	Type / Code	Total Bottles
	TP113-0.2-0.3	Soil	31-10-18	Glass Jar	1
	TP113-1.0-1.1			Glass Jar + ASB Bag	2
	TP113-1.1-1.2			PFAS Jar	1
	TP113-1.6-1.7			Glass Jar + ASB Bag	2
	TP114-1.4-1.5			Glass + PFAS Jar	2
	TP114-0.7-0.8			Glass Jar	1
	TP114-2.4-2.5			Glass Jar	1
	TP114-3.5-3.6			Glass + PFAS Jar	2
	TP114-3.7-3.8			Glass Jar + ASB Bag	2
	QC203-0.2-0.3			Glass Jar	1
	QC204-1.1-1.2			PFAS Jar	1
	QC203-0.2-0.3			Glass Jar	1
	QC204-1.1-1.2			PFAS Jar	1
	TP115-1.1-1.2			Glass Jar + ASB Bag	2
	TP115-2.4-2.5			Glass + PFAS Jar	2
	TP115-3.6-3.7			Glass Jar + ASB Bag	2
	TP115-3.0-3.1			ASB Bag	1
	TP115-3.0-3.1F	Fragment		ASB Bag	1
	TP111-0.5-0.6	Soil		Glass Jar + ASB Bag	2
	TP111-1.1-1.2			Glass Jar	2

Sampler: I attest that proper field sampling procedures in accordance with Sonversa standard procedures and/or project specifications were used during the collection of these samples.

Relinquished By: **Alicia Crabb** Signature: **[Signature]** Date: **31-10-18**

Received By: **[Signature]** Name/Signature: **Elvis** Date: **31/10/18**
Of: **Eugofins** Time: **4:20pm**
Name/Signature: **[Signature]** Date: **31/10/18**
Of: **ALS Grows West** Time: **4:20pm**
Name/Signature: **[Signature]** Date: **31/10/18**
Of: **ALS Grows West** Time: **4:20pm**
Name/Signature: **[Signature]** Date: **31/10/18**
Of: **ALS SMITHFIELD** Time: **4:20pm**

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VSA = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L=Lugol's iodine preserved white plastic bottle; SW= sulfuric acid preserved wide mouth glass jar

Completed by:

sonversa

Chain of Custody Documentation

Sonversa Pty Ltd

lab.batterley@sonversa.com.au
lab.batterley@sonversa.com.au

ABN 89 132 231 380

Laboratory: EUEOFINS M&T
Address: MARK ROAD, LANE 6 COTE
Contact: MARK ROAD, LANE 6 COTE
Phone: NIGRA VADYA

Analysis Required

Comments: e.g. Highly contaminated sample;
hazardous materials present; trace LORS etc.

Job Number: SL6913

Purchase Order:

Project Name: Phase 2 One Village

Quote No:

Sampled By: Alicia Crabb

Turn Around Time: Standard

Project Manager: Roxanne Melnikov

Page: 1 of 2

Email Report To: alicia.crabb@sonversa.com.au

Phone/Mobile: 0432 878 412

Lab ID	Sample ID	Sample Information		Time	Container Information	
		Matrix *	Date		Type / Code	Total Bottles
	TP113-0.2-0.3	Soil	31-10-18	Am	Glass Jar	1
	TP113-1.0-1.1				Glass Jar + Asb. Bag	2
	TP113-1.1-1.2				PFAS Jar	1
	TP113-1.6-1.7				Glass Jar + PFAS Bag	2
	TP114-1.4-1.5				Glass + PFAS Jar	2
	TP114-0.7-0.8				Glass Jar	1
	TP114-2.4-2.5				Glass Jar	1
	TP114-3.5-3.6				Glass + PFAS Jar	2
	TP114-3.7-3.8				Glass Jar + Asb Bag	2
	QC203-0.2-0.3				Glass Jar	1
	QC104-1.1-1.2				PFAS Jar	1
1	QC203-0.2-0.3				Glass Jar	1
2	QC204-1.1-1.2				PFAS Jar	1
	TP115-1.1-1.2				Glass Jar + Asb. Bag	2
	TP115-2.4-2.5				Glass + PFAS Jar	2
	TP115-3.4-3.7				Glass Jar + Asb Bag	2
	TP115-3.0-3.1				Asb. Bag	1
	TP115-3.0-3.1F	Fragrant			Asb. Bag	1
	TP11-0.5-0.6	Soil		Om	Glass Jar + Asb bag	2
	TP11-1.1-1.2	L		L	Glass Jar	1

Sampler: I attest that proper field sampling procedures in accordance with Sonversa standard procedures and/or project specifications were used during the collection of these samples.

Sampler Name:

Alicia Crabb

Signature:

31-10-18

Relinquished By:

Name/Signature: Alicia Crabb

Or: SENVERSA

Date: 31-10-18

Time: 4:30pm

Method of Shipment (if applicable):

Carrier / Reference #:

Received by:

Name/Signature: EUEOFINS

Or: SENVERSA

Date: 31/10/18

Time: 4:20pm

Signature:

Or: HES CREWS

Date: 21/11/18

Time: 12:17pm

Signature:

Or: ALC SMITHFIELD

Date: 2/11

Time: 3:20pm

Date: 31-10-18

Time: 3:20pm

Date: 31/10/18

Time: 4:20pm

Date: 21/11/18

Time: 12:17pm

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Date: 31-10-18

Time: 3:20pm

Date: 31/10/18

Time: 4:20pm

Date: 21/11/18

Time: 12:17pm

12/11/18

Loren Schiavon

From: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Sent: Tuesday, 6 November 2018 12:57 PM
To: Loren Schiavon
Cc: Ian Batterley
Subject: RE: S16913

Hi Loren,

Thanks for touching base. Could you please schedule analysis as follows;

TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals

- QC201
- ① • QC203
- QC205

PFAS

- ② • QC204

Cheers,

Roxanne McKinnon
Environmental Scientist

confirm which PFAS

senversa

Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent Street, Sydney NSW 2000

m: 0439 206 653 | e: roxanne.mckinnon@senversa.com.au
t: +61 2 8252 0000 | w: www.senversa.com.au | www.linkedin.com/

From: Loren Schiavon <loren.schiavon@alsglobal.com>
Sent: Monday, 5 November 2018 5:27 PM
To: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Cc: Ian Batterley <Ian.Batterley@senversa.com.au>
Subject: S16913

Hi Roxanne,

ALS has received four QC samples for your project S16913 on hold with analysis to be advised.

I was just wondering if you had an update on the analytical requirements for these samples? Let me know if you need the samples ID's to make the decision.

Thanks.

Kind Regards

Loren Schiavon
Sample Administration Coordinator, Environmental

CERTIFICATE OF ANALYSIS

Work Order	: ES1832703	Page	: 1 of 7
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 02-Nov-2018 12:17
Order number	: ----	Date Analysis Commenced	: 07-Nov-2018
C-O-C number	: ----	Issue Date	: 13-Nov-2018 11:55
Sampler	: AC, RM		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

LOR = Limit of reporting

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

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR.
Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Client sample ID	QC205_01112018	----	----	----	----
Client sampling date / time				01-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1832703-001	-----	-----	-----	-----
Result				----	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	11.1	----	----	----	----
EG005T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	10	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	14	----	----	----	----
Copper	7440-50-8	5	mg/kg	24	----	----	----	----
Lead	7439-92-1	5	mg/kg	38	----	----	----	----
Nickel	7440-02-0	2	mg/kg	6	----	----	----	----
Zinc	7440-66-6	5	mg/kg	39	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4,4'-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC205_01112018	----	----	----	----
Client sampling date / time				01-Nov-2018 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1832703-001	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
4,4'-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/5 0-2	0.05	mg/kg	<0.05	----	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons									
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	0.8	----	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	0.7	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC205_01112018	----	----	----	----
Client sampling date / time				01-Nov-2018 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1832703-001	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	1.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	0.6	----	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	1.2	----	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	50	mg/kg	<50	----	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	50	mg/kg	<50	----	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----	----



Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Client sample ID	QC205_01112018	----	----	----	----
Client sampling date / time				01-Nov-2018 00:00	----	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1832703-001	-----	-----	-----	-----	-----
Result				----	----	----	----	----	----
EP080: BTEXN - Continued									
^ Sum of BTEX	----	0.2	mg/kg	<0.2	----	----	----	----	----
^ Total Xylenes	----	0.5	mg/kg	<0.5	----	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----	----
EP066S: PCB Surrogate									
Decachlorobiphenyl	2051-24-3	0.1	%	80.1	----	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.05	%	94.9	----	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.05	%	85.9	----	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	0.5	%	76.9	----	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	84.3	----	----	----	----	----
2,4,6-Tribromophenol	118-79-6	0.5	%	60.8	----	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	0.5	%	75.1	----	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	90.4	----	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	80.0	----	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates									
1,2-Dichloroethane-D4	17060-07-0	0.2	%	99.2	----	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	107	----	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	108	----	----	----	----	----



Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2,4,6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

QUALITY CONTROL REPORT

Work Order	: ES1832703	Page	: 1 of 10
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 02-Nov-2018
Order number	: ----	Date Analysis Commenced	: 07-Nov-2018
C-O-C number	: ----	Issue Date	: 13-Nov-2018
Sampler	: AC, RM		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Edwandy Fadjjar	Organic Coordinator	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW



General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 2024030)									
ES1832702-002	Anonymous	EA055: Moisture Content	----	0.1	%	11.4	10.8	5.67	0% - 20%
ES1832942-010	Anonymous	EA055: Moisture Content	----	0.1	%	17.0	16.4	3.38	0% - 50%
EG005T: Total Metals by ICP-AES (QC Lot: 2027144)									
ES1832601-001	Anonymous	EG005T: Zinc	7440-66-6	5	mg/kg	39	38	2.79	No Limit
ES1832951-012	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	20	23	11.0	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	10	12	17.2	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	9	8	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	7	12	45.0	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	18	11.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	12	18	34.8	No Limit
ES1832601-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.00	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	8	7	0.00	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	35	28	19.7	0% - 50%
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.00	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	15	13	14.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	9	11	13.9	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 2027145)									
ES1832951-012	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
ES1832601-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 2022447)									
EP1812839-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.00	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2022446)									
EP1812839-001	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP068A: Organochlorine Pesticides (OC) (QC Lot: 2022446) - continued									
EP1812839-001	Anonymous	EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDE	72-55-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDD	72-54-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: 4,4`-DDT	50-29-3	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 2022446)									
EP1812839-001	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.25	<0.25	0.00	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<1.0	<1.0	0.00	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<1.0	<1.0	0.00	No Limit



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 2022449)									
ES1832975-010	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
EP1812839-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			205-82-3						
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Dibenz(a,h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(g,h,i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.00	No Limit

Page : 5 of 10
 Work Order : ES1832703
 Client : SENVERSA PTY LTD
 Project : S16913 Phase 2 Due Diligence



Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2022448)									
ES1832975-010	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP1812839-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	5270	5100	3.18	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	1990	1910	4.12	0% - 50%
		EP071: C10 - C14 Fraction	----	50	mg/kg	1160	1070	7.47	0% - 20%
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2022812)									
ES1832601-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
ES1832975-020	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2022448)									
ES1832975-010	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.00	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.00	No Limit
EP1812839-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	5400	5300	1.91	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	1280	1200	6.86	0% - 50%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	2350	2300	2.50	0% - 20%
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2022812)									
ES1832601-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
ES1832975-020	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.00	No Limit
EP080: BTEXN (QC Lot: 2022812)									
ES1832601-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
ES1832975-020	Anonymous	EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit
		EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.00	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.00	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.00	No Limit

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

Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
	Spike	Spike Recovery (%)	Recovery Limits (%)	
Result	Concentration	LCS	Low	High
<5	21.7 mg/kg	99.6	86	126
<1	4.64 mg/kg	103	83	113
<2	43.9 mg/kg	96.2	76	128
<5	32 mg/kg	99.7	86	120
<5	40 mg/kg	105	80	114
<2	55 mg/kg	106	87	123
<5	60.8 mg/kg	111	80	122
<0.1	2.57 mg/kg	76.2	70	105
<0.1	1 mg/kg	104	62	126
<0.05	0.5 mg/kg	94.0	69	113
<0.05	0.5 mg/kg	92.2	65	117
<0.05	0.5 mg/kg	88.6	67	119
<0.05	0.5 mg/kg	96.7	68	116
<0.05	0.5 mg/kg	90.7	65	117
<0.05	0.5 mg/kg	97.0	67	115
<0.05	0.5 mg/kg	97.2	69	115
<0.05	0.5 mg/kg	88.7	62	118
<0.05	0.5 mg/kg	84.5	63	117
<0.05	0.5 mg/kg	90.4	66	116
<0.05	0.5 mg/kg	84.1	64	116
<0.05	0.5 mg/kg	88.4	66	116
<0.05	0.5 mg/kg	89.1	67	115
<0.05	0.5 mg/kg	84.0	67	123
<0.05	0.5 mg/kg	87.5	69	115
<0.05	0.5 mg/kg	87.2	69	121
<0.05	0.5 mg/kg	101	56	120
<0.05	0.5 mg/kg	95.3	62	124
<0.2	0.5 mg/kg	80.5	66	120
<0.05	0.5 mg/kg	90.6	64	122
<0.2	0.5 mg/kg	82.0	54	130



Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) Low High	
Method: Compound	CAS Number	LOR	Unit	Result				
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2022446) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	85.9	59	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	80.0	62	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	78.1	54	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.8	67	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	87.9	70	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	89.8	72	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	84.9	68	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	102	68	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	84.6	69	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	87.5	76	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	81.4	64	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	85.3	70	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	80.4	69	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	83.8	66	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	78.2	68	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	88.4	62	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	81.2	68	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	87.4	65	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	62.7	41	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2022449)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	83.1	77	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	81.1	72	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	88.6	73	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	83.3	72	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	84.6	75	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	98.5	77	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	89.2	73	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	87.5	74	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	78.6	69	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	83.8	75	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	0.5	mg/kg	<0.5	6 mg/kg	78.0	68	116
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	90.0	74	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	86.1	70	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	87.5	61	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	87.3	62	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	86.0	63	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022448)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	106	75	129

Matrix Spike (MS) Report

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005T: Total Metals by ICP-AES (QCLot: 2027144)							
ES1832601-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.7	70	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	101	70	130
		EG005T: Chromium	7440-47-3	50 mg/kg	106	70	130
		EG005T: Copper	7440-50-8	250 mg/kg	108	70	130
		EG005T: Lead	7439-92-1	250 mg/kg	114	70	130
		EG005T: Nickel	7440-02-0	50 mg/kg	86.3	70	130
		EG005T: Zinc	7440-66-6	250 mg/kg	108	70	130
EG035T: Total Recoverable Mercury by FIMS (QCLot: 2027145)							
ES1832601-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	88.9	70	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2022447)							



Sub-Matrix: SOIL				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 2022447) - continued							
EP1812839-001	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	83.0	70	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 2022446)							
EP1812839-001	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	77.4	70	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	89.6	70	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	81.4	70	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	77.2	70	130
		EP068: Endrin	72-20-8	2 mg/kg	75.8	70	130
		EP068: 4,4'-DDT	50-29-3	2 mg/kg	77.3	70	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2022446)							
EP1812839-001	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	79.2	70	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	85.3	70	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	71.4	70	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	71.8	70	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	77.7	70	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2022449)							
EP1812839-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	83.5	70	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	86.8	70	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022448)							
EP1812839-001	Anonymous	EP071: C10 - C14 Fraction	----	523 mg/kg	88.6	73	137
		EP071: C15 - C28 Fraction	----	2319 mg/kg	102	53	131
		EP071: C29 - C36 Fraction	----	1714 mg/kg	108	52	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2022812)							
ES1832601-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	114	70	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2022448)							
EP1812839-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	87.4	73	137
		EP071: >C16 - C34 Fraction	----	3223 mg/kg	111	53	131
		EP071: >C34 - C40 Fraction	----	1058 mg/kg	108	52	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2022812)							
ES1832601-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	115	70	130
EP080: BTEXN (QCLot: 2022812)							
ES1832601-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	98.2	70	130
		EP080: Toluene	108-88-3	2.5 mg/kg	99.5	70	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	98.4	70	130
		EP080: meta- & para-Xylene	108-38-3	2.5 mg/kg	95.3	70	130
			106-42-3				
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	99.9	70	130



Sub-Matrix: SOIL

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP080: BTEXN (QCLot: 2022812) - continued							
ES1832601-001	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	87.9	70	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1832703	Page	: 1 of 5
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 02-Nov-2018
Site	: ----	Issue Date	: 13-Nov-2018
Sampler	: AC, RM	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC205_01112018	01-Nov-2018	----	----	----	07-Nov-2018	15-Nov-2018	✓
EG005T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC205_01112018	01-Nov-2018	09-Nov-2018	30-Apr-2019	✓	09-Nov-2018	30-Apr-2019	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC205_01112018	01-Nov-2018	09-Nov-2018	29-Nov-2018	✓	09-Nov-2018	29-Nov-2018	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM)) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080) QC205_01112018	01-Nov-2018	07-Nov-2018	15-Nov-2018	✓	09-Nov-2018	15-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080) QC205_01112018	01-Nov-2018	07-Nov-2018	15-Nov-2018	✓	09-Nov-2018	15-Nov-2018	✓
Soil Glass Jar - Unpreserved (EP071) QC205_01112018	01-Nov-2018	08-Nov-2018	15-Nov-2018	✓	09-Nov-2018	18-Dec-2018	✓



Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080) QC205_01112018	01-Nov-2018	07-Nov-2018	15-Nov-2018	✓	09-Nov-2018	15-Nov-2018	✓



Quality Control Parameter Frequency Compliance

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

Matrix: **SOIL**

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

Quality Control Sample Type		Count		Rate (%)		Quality Control Specification	
Analytical Methods	Method	QC	Regular	Actual	Expected		Evaluation
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	15	13.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	3	12	25.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	15	6.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	10	10.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	9	11.11	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM (2013) Schedule B(3) Section 7.1 and Table 1 (14 day holding time).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM (2013) Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 504)
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270D Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM (2013) Schedule B(3) (Method 504,505)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015A Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM amended 2013.
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270D. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3) (Method 502 and 507)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260B. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM amended 2013.
Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM (2013) Schedule B(3) (Method 202)
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na ₂ SO ₄ and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES1832703

Client : SENVERSA PTY LTD Contact : ROXANNE MCKINNON Address : Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000 E-mail : roxanne.mckinnon@senversa.com.au Telephone : ---- Facsimile : ---- Project : S16913 Phase 2 Due Diligence Order number : ---- C-O-C number : ---- Site : ---- Sampler : AC, RM	Laboratory : Environmental Division Sydney Contact : Larissa Burns Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Larissa.burns@alsglobal.com Telephone : +6138549 9644 Facsimile : +61-2-8784 8500 Page : 1 of 3 Quote number : EM2017SENV0009 (EN/333 (secondary work only)) QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 02-Nov-2018 12:17	Issue Date : 06-Nov-2018
Client Requested Due Date : 12-Nov-2018	Scheduled Reporting Date : 12-Nov-2018

Delivery Details

Mode of Delivery : Carrier	Security Seal : Intact.
No. of coolers/boxes : 1	Temperature : 6.3°C - Ice present
Receipt Detail :	No. of samples received / analysed : 1 / 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **SOIL**

Laboratory sample ID	Client sampling date / time	Client sample ID	SOIL - EA055-103 Moisture Content	SOIL - S-16 TRH/BTEXN/PAH/OC/OP/PCB/8Metals
ES1832703-001	01-Nov-2018 00:00	QC205_01112018	✓	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

ALICIA CRONLY

- *AU Certificate of Analysis - NATA (COA)	Email	alicia.cronly@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	alicia.cronly@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	alicia.cronly@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	alicia.cronly@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	alicia.cronly@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	alicia.cronly@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	alicia.cronly@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	alicia.cronly@senversa.com.au

IAN BATTERLEY

- *AU Certificate of Analysis - NATA (COA)	Email	ian.batterley@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ian.batterley@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ian.batterley@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ian.batterley@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	ian.batterley@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	ian.batterley@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	ian.batterley@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	ian.batterley@senversa.com.au

ROXANNE MCKINNON

- *AU Certificate of Analysis - NATA (COA)	Email	roxanne.mckinnon@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	roxanne.mckinnon@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	roxanne.mckinnon@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	roxanne.mckinnon@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

sonversa & lan. bates/gascon/sonversa.com.au

Chain of Custody Documentation

Sonversa Pty Ltd
www.sonversa.com.au
ABN 89 132 231 380
Laboratory: EUROFINIS M.C.T
Address: MARIS ROAD, LANE CAVE
Contact: NIELLA VANDYA
Phone: NIELLA VANDYA

Job Number: S16913

Project Name: Phase 2 road Drilling

Sampled By: AC/DM

Project Manager: P. McKeown

Turn Around Time: 5 days

Page: 1 of 4

Email Report To: ~~alicia@sonversa.com.au~~ Phone/Mobile:

SS02 - "																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				

Sampler: I attest that proper field sampling procedures in accordance with Sonversa standard procedures and/or project specifications were used during the collection of these samples:

Relinquished By: P. McKeown

Name/Signature: P. McKeown

Date: 1/11/18

Method of Shipment (if applicable):

Carrier / Reference #:

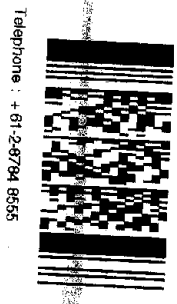
Date/Time:

Carrier / Reference #:

Date/Time:

Analysis Required	Comments: e.g. Highly contaminated sample, hazardous materials present, trace LORs etc.
ON HOLD	
Asbestos (presence/absence)	
TRH	
BTGX	
PAH	
OCUP/OPP	
PCB	
Heavy metals	

Environmental Division
Sydney
Work Order Reference
ES1832703



Telephone: + 61-2-9784 8555

4.133C

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved Plastic; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Volatile Hydrocarbon Acid (HCl) Preserved; VS = VOA Volatile Sulfuric Preserved; VSA = Sulfuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulfuric Preserved Plastic; F = Fomaldenhyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L = Lugol's Iodine preserved white plastic bottle; SW = sulfuric acid preserved white mouth glass jar

senversa

senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory: ENEOFINS M&T
Address: Mares Road, Lane Cove
Contact: MATHA VAIKHA
Phone:

Chain of Custody Documentation

Job Number: SIGA13		Purchase Order:	
Project Name: Phase 2 Due Diligence		Quote No:	
Sampled By: AC/RM		Turn Around Time:	
Project Manager: E. McNamee		Page: 2 of 4	
Email Report To: See Page 1		Phone/Mobile:	

Lab ID	Sample ID	Matrix *	Date	Time	Container Information Type / Code	Total Bottles	Analysis Required	Comments: e.g. Highly contaminated sample; hazardous materials present; trace LORs etc.
SP02.011208.F	Fragment	1-11-18	pm	BAG	1	X	ON HOLD	
SP05.011208.F								
SP15.011208.F								
SP17.011208.F								
TP12.05-0.6	Soil		pm	Glass Jar	1			
"	-1.6-1.7			"	1			
"	-1.9-2.1			Glass + PPFAS Jar	2			
TP11.09-1.0				Glass	1			
"	-1.2-1.3				1			
"	-1.6-1.7				1			
"	-2.4-2.5			Glass + PPFAS Jar	2			
"	-2.8-2.9			Glass Jar	1			
"	-3.7-3.8			Glass Jar	1			
TP12.02-0.3				Glass + PPFAS Jar	2			
TP20.1.8-1.9				"	2			
AC105.011208			pm	Glass Jar + Poly Bag	2			
AC205.011208			pm	"	2			
TP12.05-6.6			pm	BAG	1			
TP11.9.1.8-1.7				BAG	1			
AC503.011208	Water		pm	2x V GMA 1 Plastic	3			

Relinquished By:	Method of Shipment (if applicable):	Received By:	Signature:	Date:
Name/Signature: R. McNamee	Carrier / Reference #:	Name/Signature: ENEOFINS		
Of:	Date/Time:	Of:		
Name/Signature:	Carrier / Reference #:	Name/Signature: RCP		
Of:	Date/Time:	Of:		
Name/Signature:	Carrier / Reference #:	Name/Signature: AC5		
Of:	Date/Time:	Of:		

Water Containing Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; STH = Sodium thiosulfate preserved plastic; V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle; SP = Sulphuric Preserved Plastic; F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L = Lugol's Iodine preserved white plastic bottle; SW = sulphuric acid preserved wide mouth glass jar

Completed by: _____
Checked by: _____

12/11/18

Loren Schiavon

From: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Sent: Tuesday, 6 November 2018 12:57 PM
To: Loren Schiavon
Cc: Ian Batterley
Subject: RE: S16913

Hi Loren,

Thanks for touching base. Could you please schedule analysis as follows;

TRH, BTEX, OCP/OPP, PAHs, PCBs, heavy metals

- QC201
- QC203
- ① • QC205

PFAS

- QC204

Cheers,

Roxanne McKinnon
Environmental Scientist

senversa

Senversa Pty Ltd
Level 5, The Grafton Bond Building, 201 Kent Street, Sydney NSW 2000

m: 0439 206 653 | e: roxanne.mckinnon@senversa.com.au
t: +61 2 8252 0000 | w: www.senversa.com.au | www.linkedin.com/company/senversa

From: Loren Schiavon <loren.schiavon@alsglobal.com>
Sent: Monday, 5 November 2018 5:27 PM
To: Roxanne McKinnon <roxanne.mckinnon@senversa.com.au>
Cc: Ian Batterley <ian.batterley@senversa.com.au>
Subject: S16913

Hi Roxanne.

CERTIFICATE OF ANALYSIS

Work Order	: ES1833894	Page	: 1 of 12
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 13-Nov-2018 17:13
Order number	: ----	Date Analysis Commenced	: 13-Nov-2018
C-O-C number	: ----	Issue Date	: 19-Nov-2018 15:53
Sampler	: Michelle Damasio		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Tony DeSouza	Senior Microbiologist	Sydney Microbiology, Smithfield, NSW



General Comments

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

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

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

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

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

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

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

LOR = Limit of reporting

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

Ø = ALS is not NATA accredited for these tests.

~ = Indicates an estimated value.

- MF = membrane filtration
- CFU = colony forming unit
- EP231X; Results for sample "QC201_13112018" have been confirmed by re-extraction and re-analysis.
- Microbiological Comment: In accordance with ALS work instruction QWI-MIC/04, membrane filtration result is reported an approximate (~) when the count of colonies on the filtered membrane is outside the range of 10 - 100cfu.
- EP075: 'Sum of PAH' is the sum of the USEPA 16 priority PAHs
- MW006 is ALS's internal code and is equivalent to AS4276.7.
- MW007 is ALS's internal code and is equivalent to AS4276.5.
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenzo(a,h)anthracene (1.0), Benzo(g,h,i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero.



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC201_13112018	----	----	----	----
Client sampling date / time					13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EG020F: Dissolved Metals by ICP-MS									
Arsenic	7440-38-2	0.001	mg/L		0.004	----	----	----	----
Cadmium	7440-43-9	0.0001	mg/L		<0.0001	----	----	----	----
Chromium	7440-47-3	0.001	mg/L		0.002	----	----	----	----
Copper	7440-50-8	0.001	mg/L		0.001	----	----	----	----
Lead	7439-92-1	0.001	mg/L		<0.001	----	----	----	----
Nickel	7440-02-0	0.001	mg/L		0.001	----	----	----	----
Zinc	7440-66-6	0.005	mg/L		0.009	----	----	----	----
EG035F: Dissolved Mercury by FIMS									
Mercury	7439-97-6	0.0001	mg/L		<0.0001	----	----	----	----
EK055G: Ammonia as N by Discrete Analyser									
Ammonia as N	7664-41-7	0.01	mg/L		2.00	----	----	----	----
EK057G: Nitrite as N by Discrete Analyser									
Nitrite as N	14797-65-0	0.01	mg/L		0.02	----	----	----	----
EK058G: Nitrate as N by Discrete Analyser									
Nitrate as N	14797-55-8	0.01	mg/L		0.17	----	----	----	----
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser									
Nitrite + Nitrate as N	----	0.01	mg/L		0.19	----	----	----	----
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser									
Total Kjeldahl Nitrogen as N	----	0.1	mg/L		2.2	----	----	----	----
EK062G: Total Nitrogen as N (TKN + NOx) by Discrete Analyser									
^ Total Nitrogen as N	----	0.1	mg/L		2.4	----	----	----	----
EK067G: Total Phosphorus as P by Discrete Analyser									
Total Phosphorus as P	----	0.01	mg/L		0.55	----	----	----	----
EP068A: Organochlorine Pesticides (OC)									
alpha-BHC	319-84-6	0.5	µg/L		<0.5	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L		<0.5	----	----	----	----
beta-BHC	319-85-7	0.5	µg/L		<0.5	----	----	----	----
gamma-BHC	58-89-9	0.5	µg/L		<0.5	----	----	----	----
delta-BHC	319-86-8	0.5	µg/L		<0.5	----	----	----	----
Heptachlor	76-44-8	0.5	µg/L		<0.5	----	----	----	----
Aldrin	309-00-2	0.5	µg/L		<0.5	----	----	----	----
Heptachlor epoxide	1024-57-3	0.5	µg/L		<0.5	----	----	----	----
trans-Chlordane	5103-74-2	0.5	µg/L		<0.5	----	----	----	----
alpha-Endosulfan	959-98-8	0.5	µg/L		<0.5	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC201_13112018	----	----	----	----
Client sampling date / time					13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued									
cis-Chlordane	5103-71-9	0.5	µg/L		<0.5	----	----	----	----
Dieldrin	60-57-1	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDE	72-55-9	0.5	µg/L		<0.5	----	----	----	----
Endrin	72-20-8	0.5	µg/L		<0.5	----	----	----	----
beta-Endosulfan	33213-65-9	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDD	72-54-8	0.5	µg/L		<0.5	----	----	----	----
Endrin aldehyde	7421-93-4	0.5	µg/L		<0.5	----	----	----	----
Endosulfan sulfate	1031-07-8	0.5	µg/L		<0.5	----	----	----	----
4,4'-DDT	50-29-3	2.0	µg/L		<2.0	----	----	----	----
Endrin ketone	53494-70-5	0.5	µg/L		<0.5	----	----	----	----
Methoxychlor	72-43-5	2.0	µg/L		<2.0	----	----	----	----
^ Total Chlordane (sum)	----	0.5	µg/L		<0.5	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.5	µg/L		<0.5	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.5	µg/L		<0.5	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)									
Dichlorvos	62-73-7	0.5	µg/L		<0.5	----	----	----	----
Demeton-S-methyl	919-86-8	0.5	µg/L		<0.5	----	----	----	----
Monocrotophos	6923-22-4	2.0	µg/L		<2.0	----	----	----	----
Dimethoate	60-51-5	0.5	µg/L		<0.5	----	----	----	----
Diazinon	333-41-5	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.5	µg/L		<0.5	----	----	----	----
Parathion-methyl	298-00-0	2.0	µg/L		<2.0	----	----	----	----
Malathion	121-75-5	0.5	µg/L		<0.5	----	----	----	----
Fenthion	55-38-9	0.5	µg/L		<0.5	----	----	----	----
Chlorpyrifos	2921-88-2	0.5	µg/L		<0.5	----	----	----	----
Parathion	56-38-2	2.0	µg/L		<2.0	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.5	µg/L		<0.5	----	----	----	----
Chlorfenvinphos	470-90-6	0.5	µg/L		<0.5	----	----	----	----
Bromophos-ethyl	4824-78-6	0.5	µg/L		<0.5	----	----	----	----
Fenamiphos	22224-92-6	0.5	µg/L		<0.5	----	----	----	----
Prothiofos	34643-46-4	0.5	µg/L		<0.5	----	----	----	----
Ethion	563-12-2	0.5	µg/L		<0.5	----	----	----	----
Carbophenothion	786-19-6	0.5	µg/L		<0.5	----	----	----	----
Azinphos Methyl	86-50-0	0.5	µg/L		<0.5	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				QC201_13112018	----	----	----	----
Client sampling date / time				13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----
EP074A: Monocyclic Aromatic Hydrocarbons								
Styrene	100-42-5	5	µg/L	<5	----	----	----	----
Isopropylbenzene	98-82-8	5	µg/L	<5	----	----	----	----
n-Propylbenzene	103-65-1	5	µg/L	<5	----	----	----	----
1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	----	----	----	----
sec-Butylbenzene	135-98-8	5	µg/L	<5	----	----	----	----
1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	----	----	----	----
tert-Butylbenzene	98-06-6	5	µg/L	<5	----	----	----	----
p-Isopropyltoluene	99-87-6	5	µg/L	<5	----	----	----	----
n-Butylbenzene	104-51-8	5	µg/L	<5	----	----	----	----
EP074B: Oxygenated Compounds								
Vinyl Acetate	108-05-4	50	µg/L	<50	----	----	----	----
2-Butanone (MEK)	78-93-3	50	µg/L	<50	----	----	----	----
4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	----	----	----	----
2-Hexanone (MBK)	591-78-6	50	µg/L	<50	----	----	----	----
EP074C: Sulfonated Compounds								
Carbon disulfide	75-15-0	5	µg/L	<5	----	----	----	----
EP074D: Fumigants								
2,2-Dichloropropane	594-20-7	5	µg/L	<5	----	----	----	----
1,2-Dichloropropane	78-87-5	5	µg/L	<5	----	----	----	----
cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	----	----	----	----
trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	----	----	----	----
1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	----	----	----	----
EP074E: Halogenated Aliphatic Compounds								
Dichlorodifluoromethane	75-71-8	50	µg/L	<50	----	----	----	----
Chloromethane	74-87-3	50	µg/L	<50	----	----	----	----
Vinyl chloride	75-01-4	50	µg/L	<50	----	----	----	----
Bromomethane	74-83-9	50	µg/L	<50	----	----	----	----
Chloroethane	75-00-3	50	µg/L	<50	----	----	----	----
Trichlorofluoromethane	75-69-4	50	µg/L	<50	----	----	----	----
1,1-Dichloroethene	75-35-4	5	µg/L	<5	----	----	----	----
Iodomethane	74-88-4	5	µg/L	<5	----	----	----	----
trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	----	----	----	----
1,1-Dichloroethane	75-34-3	5	µg/L	<5	----	----	----	----
cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				QC201_13112018	----	----	----	----
Client sampling date / time				13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----
EP074E: Halogenated Aliphatic Compounds - Continued								
1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	----	----	----	----
1.1-Dichloropropylene	563-58-6	5	µg/L	<5	----	----	----	----
Carbon Tetrachloride	56-23-5	5	µg/L	<5	----	----	----	----
1.2-Dichloroethane	107-06-2	5	µg/L	<5	----	----	----	----
Trichloroethene	79-01-6	5	µg/L	<5	----	----	----	----
Dibromomethane	74-95-3	5	µg/L	<5	----	----	----	----
1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	----	----	----	----
1.3-Dichloropropane	142-28-9	5	µg/L	<5	----	----	----	----
Tetrachloroethene	127-18-4	5	µg/L	<5	----	----	----	----
1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	----	----	----	----
trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	----	----	----	----
cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	----	----	----	----
1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	----	----	----	----
1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	----	----	----	----
Pentachloroethane	76-01-7	5	µg/L	<5	----	----	----	----
1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	----	----	----	----
Hexachlorobutadiene	87-68-3	5	µg/L	<5	----	----	----	----
EP074F: Halogenated Aromatic Compounds								
Chlorobenzene	108-90-7	5	µg/L	<5	----	----	----	----
Bromobenzene	108-86-1	5	µg/L	<5	----	----	----	----
2-Chlorotoluene	95-49-8	5	µg/L	<5	----	----	----	----
4-Chlorotoluene	106-43-4	5	µg/L	<5	----	----	----	----
1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	----	----	----	----
1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	----	----	----	----
1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	----	----	----	----
1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	----	----	----	----
1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	----	----	----	----
EP074G: Trihalomethanes								
Chloroform	67-66-3	5	µg/L	<5	----	----	----	----
Bromodichloromethane	75-27-4	5	µg/L	<5	----	----	----	----
Dibromochloromethane	124-48-1	5	µg/L	<5	----	----	----	----
Bromoform	75-25-2	5	µg/L	<5	----	----	----	----
EP074H: Naphthalene								
Naphthalene	91-20-3	5	µg/L	<5	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				QC201_13112018	----	----	----	----
Client sampling date / time				13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----

EP075(SIM)B: Polynuclear Aromatic Hydrocarbons

Naphthalene	91-20-3	1.0	µg/L	<1.0	----	----	----	----
Acenaphthylene	208-96-8	1.0	µg/L	<1.0	----	----	----	----
Acenaphthene	83-32-9	1.0	µg/L	<1.0	----	----	----	----
Fluorene	86-73-7	1.0	µg/L	<1.0	----	----	----	----
Phenanthrene	85-01-8	1.0	µg/L	<1.0	----	----	----	----
Anthracene	120-12-7	1.0	µg/L	<1.0	----	----	----	----
Fluoranthene	206-44-0	1.0	µg/L	<1.0	----	----	----	----
Pyrene	129-00-0	1.0	µg/L	<1.0	----	----	----	----
Benz(a)anthracene	56-55-3	1.0	µg/L	<1.0	----	----	----	----
Chrysene	218-01-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(k)fluoranthene	207-08-9	1.0	µg/L	<1.0	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	1.0	µg/L	<1.0	----	----	----	----
Dibenz(a,h)anthracene	53-70-3	1.0	µg/L	<1.0	----	----	----	----
Benzo(g,h,i)perylene	191-24-2	1.0	µg/L	<1.0	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	µg/L	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	µg/L	<0.5	----	----	----	----

EP075C: Phthalate Esters

Dimethyl phthalate	131-11-3	2	µg/L	<2	----	----	----	----
Diethyl phthalate	84-66-2	2	µg/L	<2	----	----	----	----
Di-n-butyl phthalate	84-74-2	2	µg/L	<2	----	----	----	----
Butyl benzyl phthalate	85-68-7	2	µg/L	<2	----	----	----	----
bis(2-ethylhexyl) phthalate	117-81-7	10	µg/L	<10	----	----	----	----
Di-n-octylphthalate	117-84-0	2	µg/L	<2	----	----	----	----
Di (2-ethylhexyl) adipate	103-23-1	2	µg/L	<2	----	----	----	----
^ Sum of Phthalates	----	2	µg/L	<2	----	----	----	----

EP080/071: Total Petroleum Hydrocarbons

C6 - C9 Fraction	----	20	µg/L	<20	----	----	----	----
C10 - C14 Fraction	----	50	µg/L	<50	----	----	----	----
C15 - C28 Fraction	----	100	µg/L	<100	----	----	----	----
C29 - C36 Fraction	----	50	µg/L	<50	----	----	----	----
^ C10 - C36 Fraction (sum)	----	50	µg/L	<50	----	----	----	----

EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC201_13112018	----	----	----	----
Client sampling date / time					13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833894-001	-----	-----	-----	-----
				Result		----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions - Continued									
C6 - C10 Fraction	C6_C10	20	µg/L		<20	----	----	----	----
^ C6 - C10 Fraction minus BTEX (F1)	C6_C10-BTEX	20	µg/L		<20	----	----	----	----
>C10 - C16 Fraction	----	100	µg/L		<100	----	----	----	----
>C16 - C34 Fraction	----	100	µg/L		<100	----	----	----	----
>C34 - C40 Fraction	----	100	µg/L		<100	----	----	----	----
^ >C10 - C40 Fraction (sum)	----	100	µg/L		<100	----	----	----	----
^ >C10 - C16 Fraction minus Naphthalene (F2)	----	100	µg/L		<100	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	1	µg/L		<1	----	----	----	----
Toluene	108-88-3	2	µg/L		<2	----	----	----	----
Ethylbenzene	100-41-4	2	µg/L		<2	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	2	µg/L		<2	----	----	----	----
ortho-Xylene	95-47-6	2	µg/L		<2	----	----	----	----
^ Total Xylenes	----	2	µg/L		<2	----	----	----	----
^ Sum of BTEX	----	1	µg/L		<1	----	----	----	----
Naphthalene	91-20-3	5	µg/L		<5	----	----	----	----
EP231A: Perfluoroalkyl Sulfonic Acids									
Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L		0.02	----	----	----	----
Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L		<0.02	----	----	----	----
Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L		0.04	----	----	----	----
Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L		<0.02	----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids									
Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L		<0.1	----	----	----	----
Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L		<0.02	----	----	----	----
Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L		<0.02	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC201_13112018	----	----	----	----
Client sampling date / time					13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833894-001	-----	-----	-----	-----
				Result		----	----	----	----
EP231B: Perfluoroalkyl Carboxylic Acids - Continued									
Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L		<0.02	----	----	----	----
Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L		0.01	----	----	----	----
Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L		<0.02	----	----	----	----
Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L		<0.02	----	----	----	----
Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L		<0.02	----	----	----	----
Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L		<0.05	----	----	----	----
EP231C: Perfluoroalkyl Sulfonamides									
Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L		<0.02	----	----	----	----
N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L		<0.05	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L		<0.05	----	----	----	----
N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L		<0.02	----	----	----	----
N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L		<0.02	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids									
4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L		<0.05	----	----	----	----
6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L		<0.05	----	----	----	----
8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L		<0.05	----	----	----	----



Analytical Results

Sub-Matrix: WATER (Matrix: WATER)				Client sample ID	QC201_13112018	----	----	----	----
Client sampling date / time					13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES1833894-001	-----	-----	-----	-----
				Result	----	----	----	----	----
EP231D: (n:2) Fluorotelomer Sulfonic Acids - Continued									
10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L		<0.05	----	----	----	----
EP231P: PFAS Sums									
Sum of PFAS	----	0.01	µg/L		0.07	----	----	----	----
Sum of PFHxS and PFOS	355-46-4/1763-23-1	0.01	µg/L		0.04	----	----	----	----
Sum of PFAS (WA DER List)	----	0.01	µg/L		0.07	----	----	----	----
MW006: Faecal Coliforms & E.coli by MF									
Faecal Coliforms	----	1	CFU/100mL		<1	----	----	----	----
MW007: Coliforms by MF									
Coliforms	----	1	CFU/100mL		~400	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate									
Dibromo-DDE	21655-73-2	0.5	%		96.2	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate									
DEF	78-48-8	0.5	%		72.8	----	----	----	----
EP074S: VOC Surrogates									
1,2-Dichloroethane-D4	17060-07-0	5	%		111	----	----	----	----
Toluene-D8	2037-26-5	5	%		115	----	----	----	----
4-Bromofluorobenzene	460-00-4	5	%		116	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates									
Phenol-d6	13127-88-3	1.0	%		18.5	----	----	----	----
2-Chlorophenol-D4	93951-73-6	1.0	%		41.2	----	----	----	----
2,4,6-Tribromophenol	118-79-6	1.0	%		73.2	----	----	----	----
EP075(SIM)T: PAH Surrogates									
2-Fluorobiphenyl	321-60-8	1.0	%		67.5	----	----	----	----
Anthracene-d10	1719-06-8	1.0	%		87.4	----	----	----	----
4-Terphenyl-d14	1718-51-0	1.0	%		91.7	----	----	----	----
EP075S: Acid Extractable Surrogates									
2-Fluorophenol	367-12-4	2	%		19.9	----	----	----	----
Phenol-d6	13127-88-3	2	%		15.2	----	----	----	----
2-Chlorophenol-D4	93951-73-6	2	%		34.0	----	----	----	----
2,4,6-Tribromophenol	118-79-6	2	%		58.1	----	----	----	----
EP075T: Base/Neutral Extractable Surrogates									
Nitrobenzene-D5	4165-60-0	2	%		41.3	----	----	----	----



Analytical Results

Sub-Matrix: **WATER**
 (Matrix: **WATER**)

Client sample ID

				QC201_13112018	----	----	----	----
Client sampling date / time				13-Nov-2018 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES1833894-001	-----	-----	-----	-----
Result					----	----	----	----
EP075T: Base/Neutral Extractable Surrogates - Continued								
1,2-Dichlorobenzene-D4	2199-69-1	2	%	35.8	----	----	----	----
2-Fluorobiphenyl	321-60-8	2	%	45.0	----	----	----	----
Anthracene-d10	1719-06-8	2	%	76.0	----	----	----	----
4-Terphenyl-d14	1718-51-0	2	%	79.7	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1,2-Dichloroethane-D4	17060-07-0	2	%	106	----	----	----	----
Toluene-D8	2037-26-5	2	%	106	----	----	----	----
4-Bromofluorobenzene	460-00-4	2	%	109	----	----	----	----
EP231S: PFAS Surrogate								
13C4-PFOS	----	0.02	%	109	----	----	----	----
13C8-PFOA	----	0.02	%	91.8	----	----	----	----



Surrogate Control Limits

Sub-Matrix: WATER		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	67	111
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	67	111
EP074S: VOC Surrogates			
1,2-Dichloroethane-D4	17060-07-0	78	133
Toluene-D8	2037-26-5	79	129
4-Bromofluorobenzene	460-00-4	81	124
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	10	44
2-Chlorophenol-D4	93951-73-6	14	94
2,4,6-Tribromophenol	118-79-6	17	125
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	20	104
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	32	112
EP075S: Acid Extractable Surrogates			
2-Fluorophenol	367-12-4	10	117
Phenol-d6	13127-88-3	10	69
2-Chlorophenol-D4	93951-73-6	21	130
2,4,6-Tribromophenol	118-79-6	10	151
EP075T: Base/Neutral Extractable Surrogates			
Nitrobenzene-D5	4165-60-0	29	142
1,2-Dichlorobenzene-D4	2199-69-1	24	121
2-Fluorobiphenyl	321-60-8	27	135
Anthracene-d10	1719-06-8	27	113
4-Terphenyl-d14	1718-51-0	21	123
EP080S: TPH(V)/BTEX Surrogates			
1,2-Dichloroethane-D4	17060-07-0	71	137
Toluene-D8	2037-26-5	79	131
4-Bromofluorobenzene	460-00-4	70	128
EP231S: PFAS Surrogate			
13C4-PFOS	----	60	120
13C8-PFOA	----	60	120

QUALITY CONTROL REPORT

Work Order	: ES1833894	Page	: 1 of 16
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Contact	: Larissa Burns
Address	: Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 13-Nov-2018
Order number	: ----	Date Analysis Commenced	: 13-Nov-2018
C-O-C number	: ----	Issue Date	: 19-Nov-2018
Sampler	: Michelle Damasio		
Site	: ----		
Quote number	: EN/333 (secondary work only)		
No. of samples received	: 1		
No. of samples analysed	: 1		



This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

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

Signatories

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

<i>Signatories</i>	<i>Position</i>	<i>Accreditation Category</i>
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Ankit Joshi	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Franco Lentini		Sydney Organics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW
Tony DeSouza	Senior Microbiologist	Sydney Microbiology, Smithfield, NSW



General Comments

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

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

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

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

Laboratory Duplicate (DUP) Report

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

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EG020F: Dissolved Metals by ICP-MS (QC Lot: 2036690)									
ES1833778-001	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	0.001	0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
ES1833843-003	Anonymous	EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
		EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	<0.001	0.00	No Limit
		EG020A-F: Nickel	7440-02-0	0.001	mg/L	0.002	0.002	0.00	No Limit
		EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	<0.005	0.00	No Limit
EG035F: Dissolved Mercury by FIMS (QC Lot: 2036692)									
WN1806595-001	Anonymous	EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	<0.0001	0.00	No Limit
EK055G: Ammonia as N by Discrete Analyser (QC Lot: 2035331)									
ES1833457-001	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	0.29	0.28	3.80	0% - 20%
ES1833700-003	Anonymous	EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK057G: Nitrite as N by Discrete Analyser (QC Lot: 2034548)									
ES1833880-010	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
ES1833880-001	Anonymous	EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2035333)									
ES1833782-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.02	0.03	0.00	No Limit

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QC Lot: 2035333) - continued									
EW1804661-002	Anonymous	EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	0.07	0.07	0.00	No Limit
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QC Lot: 2035338)									
ES1833782-002	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	<0.1	0.00	No Limit
EW1804677-001	Anonymous	EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	35.8	32.3	10.2	0% - 50%
EK067G: Total Phosphorus as P by Discrete Analyser (QC Lot: 2035337)									
ES1833782-002	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	<0.01	0.00	No Limit
EW1804677-001	Anonymous	EK067G: Total Phosphorus as P	----	0.01	mg/L	2.82	2.70	4.26	0% - 20%
EP074A: Monocyclic Aromatic Hydrocarbons (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: Styrene	100-42-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3.5-Trimethylbenzene	108-67-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trimethylbenzene	95-63-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	<5	0.00	No Limit
EP074B: Oxygenated Compounds (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
ES1833717-001	Anonymous	EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	<50	0.00	No Limit
		EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	<50	0.00	No Limit
EP074C: Sulfonated Compounds (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: Carbon disulfide	75-15-0	5	µg/L	<5	<5	0.00	No Limit
EP074D: Fumigants (QC Lot: 2037297)									



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074D: Fumigants (QC Lot: 2037297) - continued									
ES1833843-006	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	<5	0.00	No Limit
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
ES1833717-001	Anonymous	EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074E: Halogenated Aliphatic Compounds (QC Lot: 2037297) - continued									
ES1833717-001	Anonymous	EP074: Iodomethane	74-88-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.2-Dichloroethene	156-60-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloroethane	75-34-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.2-Dichloroethene	156-59-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1-Trichloroethane	71-55-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1-Dichloropropylene	563-58-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichloroethane	107-06-2	5	µg/L	<5	<5	0.00	No Limit
		EP074: Trichloroethene	79-01-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromomethane	74-95-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2-Trichloroethane	79-00-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichloropropane	142-28-9	5	µg/L	<5	<5	0.00	No Limit
		EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.1.2-Tetrachloroethane	630-20-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: trans-1.4-Dichloro-2-butene	110-57-6	5	µg/L	<5	<5	0.00	No Limit
		EP074: cis-1.4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.1.2.2-Tetrachloroethane	79-34-5	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichloropropane	96-18-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Pentachloroethane	76-01-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloromethane	74-87-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Vinyl chloride	75-01-4	50	µg/L	<50	<50	0.00	No Limit
		EP074: Bromomethane	74-83-9	50	µg/L	<50	<50	0.00	No Limit
		EP074: Chloroethane	75-00-3	50	µg/L	<50	<50	0.00	No Limit
		EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	<50	0.00	No Limit
EP074F: Halogenated Aromatic Compounds (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit
		EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1.2.3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: Chlorobenzene	108-90-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromobenzene	108-86-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	<5	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP074F: Halogenated Aromatic Compounds (QC Lot: 2037297) - continued									
ES1833717-001	Anonymous	EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	<5	0.00	No Limit
EP074G: Trihalomethanes (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: Chloroform	67-66-3	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	<5	0.00	No Limit
		EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	<5	0.00	No Limit
		EP074: Bromoform	75-25-2	5	µg/L	<5	<5	0.00	No Limit
EP074H: Naphthalene (QC Lot: 2037297)									
ES1833843-006	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
ES1833717-001	Anonymous	EP074: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 2037296)									
ES1833717-001	Anonymous	EP080: C6 - C9 Fraction	----	20	µg/L	<20	<20	0.00	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 2037296)									
ES1833717-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	<20	0.00	No Limit
EP080: BTEXN (QC Lot: 2037296)									
ES1833717-001	Anonymous	EP080: Benzene	71-43-2	1	µg/L	<1	<1	0.00	No Limit
		EP080: Toluene	108-88-3	2	µg/L	<2	<2	0.00	No Limit
		EP080: Ethylbenzene	100-41-4	2	µg/L	<2	<2	0.00	No Limit
		EP080: meta- & para-Xylene	108-38-3	2	µg/L	<2	<2	0.00	No Limit
			106-42-3						
		EP080: ortho-Xylene	95-47-6	2	µg/L	<2	<2	0.00	No Limit
	EP080: Naphthalene	91-20-3	5	µg/L	<5	<5	0.00	No Limit	
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2035371)									
EM1818113-035	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	0.16	0.15	0.00	0% - 50%
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	0.03	0.03	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EM1818125-041	Anonymous	EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	<0.02	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231A: Perfluoroalkyl Sulfonic Acids (QC Lot: 2035371) - continued									
EM1818125-041	Anonymous	EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
EP231B: Perfluoroalkyl Carboxylic Acids (QC Lot: 2035371)									
EM1818113-035	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit
EM1818125-041	Anonymous	EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	<0.01	0.00	No Limit
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	<0.1	0.00	No Limit		
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2035371)									
EM1818113-035	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Recovery Limits (%)
EP231C: Perfluoroalkyl Sulfonamides (QC Lot: 2035371) - continued									
EM1818113-035	Anonymous	EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1818125-041	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	<0.02	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231D: (n:2) Fluorotelomer Sulfonic Acids (QC Lot: 2035371)							
EM1818113-035	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EM1818125-041	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	<0.05	0.00	No Limit
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	<0.05	0.00	No Limit
EP231P: PFAS Sums (QC Lot: 2035371)									
EM1818113-035	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	0.19	0.18	5.40	0% - 50%
EM1818125-041	Anonymous	EP231X: Sum of PFAS	----	0.01	µg/L	<0.01	<0.01	0.00	No Limit



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

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

Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result		LCS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2036690)								
EG020A-F: Arsenic	7440-38-2	0.001	mg/L	<0.001	0.1 mg/L	99.7	85	114
EG020A-F: Cadmium	7440-43-9	0.0001	mg/L	<0.0001	0.1 mg/L	102	84	110
EG020A-F: Chromium	7440-47-3	0.001	mg/L	<0.001	0.1 mg/L	102	85	111
EG020A-F: Copper	7440-50-8	0.001	mg/L	<0.001	0.1 mg/L	101	81	111
EG020A-F: Lead	7439-92-1	0.001	mg/L	<0.001	0.1 mg/L	98.6	83	111
EG020A-F: Nickel	7440-02-0	0.001	mg/L	<0.001	0.1 mg/L	99.4	82	112
EG020A-F: Zinc	7440-66-6	0.005	mg/L	<0.005	0.1 mg/L	101	81	117
EG035F: Dissolved Mercury by FIMS (QCLot: 2036692)								
EG035F: Mercury	7439-97-6	0.0001	mg/L	<0.0001	0.01 mg/L	96.7	83	105
EK055G: Ammonia as N by Discrete Analyser (QCLot: 2035331)								
EK055G: Ammonia as N	7664-41-7	0.01	mg/L	<0.01	1 mg/L	101	90	114
EK057G: Nitrite as N by Discrete Analyser (QCLot: 2034548)								
EK057G: Nitrite as N	14797-65-0	0.01	mg/L	<0.01	0.5 mg/L	104	82	114
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser (QCLot: 2035333)								
EK059G: Nitrite + Nitrate as N	----	0.01	mg/L	<0.01	0.5 mg/L	101	91	113
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser (QCLot: 2035338)								
EK061G: Total Kjeldahl Nitrogen as N	----	0.1	mg/L	<0.1	10 mg/L	89.9	69	101
				<0.1	1 mg/L	90.4	70	118
				<0.1	5 mg/L	85.5	74	118
EK067G: Total Phosphorus as P by Discrete Analyser (QCLot: 2035337)								
EK067G: Total Phosphorus as P	----	0.01	mg/L	<0.01	4.42 mg/L	90.3	71	101
				<0.01	0.442 mg/L	90.6	72	108
				<0.01	1 mg/L	110	78	118
EP068A: Organochlorine Pesticides (OC) (QCLot: 2035323)								
EP068: alpha-BHC	319-84-6	0.5	µg/L	<0.5	5 µg/L	88.1	65	107
EP068: Hexachlorobenzene (HCB)	118-74-1	0.5	µg/L	<0.5	5 µg/L	97.2	58	111
EP068: beta-BHC	319-85-7	0.5	µg/L	<0.5	5 µg/L	90.6	69	117
EP068: gamma-BHC	58-89-9	0.5	µg/L	<0.5	5 µg/L	82.1	70	112
EP068: delta-BHC	319-86-8	0.5	µg/L	<0.5	5 µg/L	91.6	69	110
EP068: Heptachlor	76-44-8	0.5	µg/L	<0.5	5 µg/L	79.5	65	108
EP068: Aldrin	309-00-2	0.5	µg/L	<0.5	5 µg/L	83.6	66	109
EP068: Heptachlor epoxide	1024-57-3	0.5	µg/L	<0.5	5 µg/L	79.2	67	107
EP068: trans-Chlordane	5103-74-2	0.5	µg/L	<0.5	5 µg/L	89.0	64	110
EP068: alpha-Endosulfan	959-98-8	0.5	µg/L	<0.5	5 µg/L	90.1	67	112



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
							Low	High
CAS Number	LOR	Unit	Result			LCS		
EP068A: Organochlorine Pesticides (OC) (QCLot: 2035323) - continued								
EP068: cis-Chlordane	5103-71-9	0.5	µg/L	<0.5	5 µg/L	88.8	63	111
EP068: Dieldrin	60-57-1	0.5	µg/L	<0.5	5 µg/L	91.7	65	113
EP068: 4,4'-DDE	72-55-9	0.5	µg/L	<0.5	5 µg/L	84.2	66	112
EP068: Endrin	72-20-8	0.5	µg/L	<0.5	5 µg/L	93.7	65	113
EP068: beta-Endosulfan	33213-65-9	0.5	µg/L	<0.5	5 µg/L	88.0	67	114
EP068: 4,4'-DDD	72-54-8	0.5	µg/L	<0.5	5 µg/L	90.4	72	122
EP068: Endrin aldehyde	7421-93-4	0.5	µg/L	<0.5	5 µg/L	82.3	67	109
EP068: Endosulfan sulfate	1031-07-8	0.5	µg/L	<0.5	5 µg/L	82.3	65	112
EP068: 4,4'-DDT	50-29-3	2	µg/L	<2.0	5 µg/L	80.6	65	112
EP068: Endrin ketone	53494-70-5	0.5	µg/L	<0.5	5 µg/L	76.6	64	110
EP068: Methoxychlor	72-43-5	2	µg/L	<2.0	5 µg/L	80.0	61	114
EP068B: Organophosphorus Pesticides (OP) (QCLot: 2035323)								
EP068: Dichlorvos	62-73-7	0.5	µg/L	<0.5	5 µg/L	85.1	66	114
EP068: Demeton-S-methyl	919-86-8	0.5	µg/L	<0.5	5 µg/L	78.7	64	113
EP068: Monocrotophos	6923-22-4	2	µg/L	<2.0	5 µg/L	23.6	20	48
EP068: Dimethoate	60-51-5	0.5	µg/L	<0.5	5 µg/L	88.7	70	110
EP068: Diazinon	333-41-5	0.5	µg/L	<0.5	5 µg/L	91.6	71	110
EP068: Chlorpyrifos-methyl	5598-13-0	0.5	µg/L	<0.5	5 µg/L	85.7	77	119
EP068: Parathion-methyl	298-00-0	2	µg/L	<2.0	5 µg/L	85.4	70	124
EP068: Malathion	121-75-5	0.5	µg/L	<0.5	5 µg/L	86.3	68	116
EP068: Fenthion	55-38-9	0.5	µg/L	<0.5	5 µg/L	78.9	69	112
EP068: Chlorpyrifos	2921-88-2	0.5	µg/L	<0.5	5 µg/L	78.4	75	119
EP068: Parathion	56-38-2	2	µg/L	<2.0	5 µg/L	81.6	67	121
EP068: Pirimphos-ethyl	23505-41-1	0.5	µg/L	<0.5	5 µg/L	86.5	69	121
EP068: Chlorfenvinphos	470-90-6	0.5	µg/L	<0.5	5 µg/L	92.3	72	110
EP068: Bromophos-ethyl	4824-78-6	0.5	µg/L	<0.5	5 µg/L	85.6	68	112
EP068: Fenamiphos	22224-92-6	0.5	µg/L	<0.5	5 µg/L	96.9	64	116
EP068: Prothiofos	34643-46-4	0.5	µg/L	<0.5	5 µg/L	88.4	68	114
EP068: Ethion	563-12-2	0.5	µg/L	<0.5	5 µg/L	89.3	74	120
EP068: Carbophenothion	786-19-6	0.5	µg/L	<0.5	5 µg/L	84.0	66	114
EP068: Azinphos Methyl	86-50-0	0.5	µg/L	<0.5	5 µg/L	95.8	52	128
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2037297)								
EP074: Styrene	100-42-5	5	µg/L	<5	10 µg/L	100	73	119
EP074: Isopropylbenzene	98-82-8	5	µg/L	<5	10 µg/L	101	76	118
EP074: n-Propylbenzene	103-65-1	5	µg/L	<5	10 µg/L	99.8	69	119
EP074: 1,3,5-Trimethylbenzene	108-67-8	5	µg/L	<5	10 µg/L	102	74	116
EP074: sec-Butylbenzene	135-98-8	5	µg/L	<5	10 µg/L	101	73	119
EP074: 1,2,4-Trimethylbenzene	95-63-6	5	µg/L	<5	10 µg/L	102	74	116
EP074: tert-Butylbenzene	98-06-6	5	µg/L	<5	10 µg/L	99.4	72	116



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit	Result					
EP074A: Monocyclic Aromatic Hydrocarbons (QCLot: 2037297) - continued								
EP074: p-Isopropyltoluene	99-87-6	5	µg/L	<5	10 µg/L	97.3	71	119
EP074: n-Butylbenzene	104-51-8	5	µg/L	<5	10 µg/L	104	65	123
EP074B: Oxygenated Compounds (QCLot: 2037297)								
EP074: Vinyl Acetate	108-05-4	50	µg/L	<50	100 µg/L	128	61	134
EP074: 2-Butanone (MEK)	78-93-3	50	µg/L	<50	100 µg/L	105	74	130
EP074: 4-Methyl-2-pentanone (MIBK)	108-10-1	50	µg/L	<50	100 µg/L	114	66	132
EP074: 2-Hexanone (MBK)	591-78-6	50	µg/L	<50	100 µg/L	107	65	137
EP074C: Sulfonated Compounds (QCLot: 2037297)								
EP074: Carbon disulfide	75-15-0	5	µg/L	<5	10 µg/L	94.4	73	127
EP074D: Fumigants (QCLot: 2037297)								
EP074: 2,2-Dichloropropane	594-20-7	5	µg/L	<5	10 µg/L	115	68	122
EP074: 1,2-Dichloropropane	78-87-5	5	µg/L	<5	10 µg/L	107	76	118
EP074: cis-1,3-Dichloropropylene	10061-01-5	5	µg/L	<5	10 µg/L	109	62	120
EP074: trans-1,3-Dichloropropylene	10061-02-6	5	µg/L	<5	10 µg/L	112	60	114
EP074: 1,2-Dibromoethane (EDB)	106-93-4	5	µg/L	<5	10 µg/L	103	69	117
EP074E: Halogenated Aliphatic Compounds (QCLot: 2037297)								
EP074: Dichlorodifluoromethane	75-71-8	50	µg/L	<50	100 µg/L	118	61	138
EP074: Chloromethane	74-87-3	50	µg/L	<50	100 µg/L	118	67	130
EP074: Vinyl chloride	75-01-4	50	µg/L	<50	100 µg/L	129	69	129
EP074: Bromomethane	74-83-9	50	µg/L	<50	100 µg/L	107	56	140
EP074: Chloroethane	75-00-3	50	µg/L	<50	100 µg/L	103	61	139
EP074: Trichlorofluoromethane	75-69-4	50	µg/L	<50	100 µg/L	114	69	131
EP074: 1,1-Dichloroethene	75-35-4	5	µg/L	<5	10 µg/L	113	70	124
EP074: Iodomethane	74-88-4	5	µg/L	<5	10 µg/L	80.2	70	128
EP074: trans-1,2-Dichloroethene	156-60-5	5	µg/L	<5	10 µg/L	112	74	118
EP074: 1,1-Dichloroethane	75-34-3	5	µg/L	<5	10 µg/L	108	74	120
EP074: cis-1,2-Dichloroethene	156-59-2	5	µg/L	<5	10 µg/L	113	77	119
EP074: 1,1,1-Trichloroethane	71-55-6	5	µg/L	<5	10 µg/L	106	67	119
EP074: 1,1-Dichloropropylene	563-58-6	5	µg/L	<5	10 µg/L	109	73	119
EP074: Carbon Tetrachloride	56-23-5	5	µg/L	<5	10 µg/L	105	62	120
EP074: 1,2-Dichloroethane	107-06-2	5	µg/L	<5	10 µg/L	118	73	123
EP074: Trichloroethene	79-01-6	5	µg/L	<5	10 µg/L	107	76	118
EP074: Dibromomethane	74-95-3	5	µg/L	<5	10 µg/L	109	73	119
EP074: 1,1,2-Trichloroethane	79-00-5	5	µg/L	<5	10 µg/L	104	72	126
EP074: 1,3-Dichloropropane	142-28-9	5	µg/L	<5	10 µg/L	107	71	129
EP074: Tetrachloroethene	127-18-4	5	µg/L	<5	10 µg/L	85.8	72	124
EP074: 1,1,1,2-Tetrachloroethane	630-20-6	5	µg/L	<5	10 µg/L	95.8	66	114
EP074: trans-1,4-Dichloro-2-butene	110-57-6	5	µg/L	<5	10 µg/L	107	60	120



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit	Result					
EP074E: Halogenated Aliphatic Compounds (QCLot: 2037297) - continued								
EP074: cis-1,4-Dichloro-2-butene	1476-11-5	5	µg/L	<5	10 µg/L	122	71	128
EP074: 1,1,2,2-Tetrachloroethane	79-34-5	5	µg/L	<5	10 µg/L	103	70	124
EP074: 1,2,3-Trichloropropane	96-18-4	5	µg/L	<5	10 µg/L	104	74	126
EP074: Pentachloroethane	76-01-7	5	µg/L	<5	10 µg/L	107	72	126
EP074: 1,2-Dibromo-3-chloropropane	96-12-8	5	µg/L	<5	10 µg/L	97.9	66	136
EP074: Hexachlorobutadiene	87-68-3	5	µg/L	<5	10 µg/L	100	58	130
EP074F: Halogenated Aromatic Compounds (QCLot: 2037297)								
EP074: Chlorobenzene	108-90-7	5	µg/L	<5	10 µg/L	102	79	117
EP074: Bromobenzene	108-86-1	5	µg/L	<5	10 µg/L	98.8	76	116
EP074: 2-Chlorotoluene	95-49-8	5	µg/L	<5	10 µg/L	103	73	119
EP074: 4-Chlorotoluene	106-43-4	5	µg/L	<5	10 µg/L	103	73	119
EP074: 1,3-Dichlorobenzene	541-73-1	5	µg/L	<5	10 µg/L	100	75	117
EP074: 1,4-Dichlorobenzene	106-46-7	5	µg/L	<5	10 µg/L	103	74	118
EP074: 1,2-Dichlorobenzene	95-50-1	5	µg/L	<5	10 µg/L	102	75	117
EP074: 1,2,4-Trichlorobenzene	120-82-1	5	µg/L	<5	10 µg/L	102	61	125
EP074: 1,2,3-Trichlorobenzene	87-61-6	5	µg/L	<5	10 µg/L	108	67	123
EP074G: Trihalomethanes (QCLot: 2037297)								
EP074: Chloroform	67-66-3	5	µg/L	<5	10 µg/L	109	72	120
EP074: Bromodichloromethane	75-27-4	5	µg/L	<5	10 µg/L	109	64	118
EP074: Dibromochloromethane	124-48-1	5	µg/L	<5	10 µg/L	100	65	115
EP074: Bromoform	75-25-2	5	µg/L	<5	10 µg/L	99.2	74	126
EP074H: Naphthalene (QCLot: 2037297)								
EP074: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	106	72	122
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2035321)								
EP075(SIM): Naphthalene	91-20-3	1	µg/L	<1.0	5 µg/L	70.5	50	94
EP075(SIM): Acenaphthylene	208-96-8	1	µg/L	<1.0	5 µg/L	69.2	64	114
EP075(SIM): Acenaphthene	83-32-9	1	µg/L	<1.0	5 µg/L	70.2	62	113
EP075(SIM): Fluorene	86-73-7	1	µg/L	<1.0	5 µg/L	79.1	64	115
EP075(SIM): Phenanthrene	85-01-8	1	µg/L	<1.0	5 µg/L	74.9	63	116
EP075(SIM): Anthracene	120-12-7	1	µg/L	<1.0	5 µg/L	89.7	64	116
EP075(SIM): Fluoranthene	206-44-0	1	µg/L	<1.0	5 µg/L	89.9	64	118
EP075(SIM): Pyrene	129-00-0	1	µg/L	<1.0	5 µg/L	86.8	63	118
EP075(SIM): Benz(a)anthracene	56-55-3	1	µg/L	<1.0	5 µg/L	73.7	64	117
EP075(SIM): Chrysene	218-01-9	1	µg/L	<1.0	5 µg/L	75.8	63	116
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2	1	µg/L	<1.0	5 µg/L	73.5	62	119
	205-82-3							
EP075(SIM): Benzo(k)fluoranthene	207-08-9	1	µg/L	<1.0	5 µg/L	89.0	63	115
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	µg/L	<0.5	5 µg/L	72.8	63	117



Sub-Matrix: **WATER**

Method: Compound				Method Blank (MB) Report Result	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%)	Recovery Limits (%)	
						LCS	Low	High
CAS Number	LOR	Unit						
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 2035321) - continued								
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	1	µg/L	<1.0	5 µg/L	72.4	60	118
EP075(SIM): Dibenz(a,h)anthracene	53-70-3	1	µg/L	<1.0	5 µg/L	79.3	61	117
EP075(SIM): Benzo(g,h,i)perylene	191-24-2	1	µg/L	<1.0	5 µg/L	79.0	59	118
EP075C: Phthalate Esters (QCLot: 2035325)								
EP075: Dimethyl phthalate	131-11-3	2	µg/L	<2	10 µg/L	80.4	64	112
EP075: Diethyl phthalate	84-66-2	2	µg/L	<2	10 µg/L	102	67	111
EP075: Di-n-butyl phthalate	84-74-2	2	µg/L	<2	10 µg/L	87.1	68	122
EP075: Butyl benzyl phthalate	85-68-7	2	µg/L	<2	10 µg/L	85.3	61	114
EP075: bis(2-ethylhexyl) phthalate	117-81-7	----	µg/L	----	10 µg/L	112	60	132
EP075: Di-n-octylphthalate	117-84-0	2	µg/L	<2	10 µg/L	79.7	62	115
EP075: Di (2-ethylhexyl) adipate	103-23-1	2	µg/L	<2	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2035324)								
EP071: C10 - C14 Fraction	----	50	µg/L	<50	2000 µg/L	96.3	76	116
EP071: C15 - C28 Fraction	----	100	µg/L	<100	3000 µg/L	100	83	109
EP071: C29 - C36 Fraction	----	50	µg/L	<50	2000 µg/L	99.8	75	113
EP080/071: Total Petroleum Hydrocarbons (QCLot: 2037296)								
EP080: C6 - C9 Fraction	----	20	µg/L	<20	260 µg/L	90.2	75	127
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2035324)								
EP071: >C10 - C16 Fraction	----	100	µg/L	<100	2500 µg/L	101	76	114
EP071: >C16 - C34 Fraction	----	100	µg/L	<100	3500 µg/L	96.5	81	111
EP071: >C34 - C40 Fraction	----	100	µg/L	<100	1500 µg/L	107	77	119
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 2037296)								
EP080: C6 - C10 Fraction	C6_C10	20	µg/L	<20	310 µg/L	94.4	75	127
EP080: BTEXN (QCLot: 2037296)								
EP080: Benzene	71-43-2	1	µg/L	<1	10 µg/L	99.1	70	122
EP080: Toluene	108-88-3	2	µg/L	<2	10 µg/L	93.3	69	123
EP080: Ethylbenzene	100-41-4	2	µg/L	<2	10 µg/L	94.2	70	120
EP080: meta- & para-Xylene	108-38-3 106-42-3	2	µg/L	<2	10 µg/L	92.6	69	121
EP080: ortho-Xylene	95-47-6	2	µg/L	<2	10 µg/L	94.1	72	122
EP080: Naphthalene	91-20-3	5	µg/L	<5	10 µg/L	101	70	120
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2035371)								
EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.02	µg/L	<0.02	0.5 µg/L	95.0	70	130
EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.02	µg/L	<0.02	0.5 µg/L	97.4	70	130
EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.02	µg/L	<0.02	0.5 µg/L	92.6	70	130
EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.02	µg/L	<0.02	0.5 µg/L	79.0	70	130
EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.01	µg/L	<0.01	0.5 µg/L	74.4	70	130
EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.02	µg/L	<0.02	0.5 µg/L	76.0	70	130



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike Concentration	Spike Recovery (%) LCS	Recovery Limits (%) LowHigh	
Method: Compound	CAS Number	LOR	Unit	Result				
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2035371)								
EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	0.1	µg/L	<0.1	2.5 µg/L	111	70	130
EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.02	µg/L	<0.02	0.5 µg/L	108	70	130
EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.02	µg/L	<0.02	0.5 µg/L	99.0	70	130
EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.02	µg/L	<0.02	0.5 µg/L	89.8	70	130
EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.01	µg/L	<0.01	0.5 µg/L	88.2	70	130
EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.02	µg/L	<0.02	0.5 µg/L	102	70	130
EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.02	µg/L	<0.02	0.5 µg/L	101	70	130
EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.02	µg/L	<0.02	0.5 µg/L	81.2	70	130
EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.02	µg/L	<0.02	0.5 µg/L	109	70	130
EP231X: Perfluorotridecanoic acid (PFTTrDA)	72629-94-8	0.02	µg/L	<0.02	0.5 µg/L	98.2	70	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	0.05	µg/L	<0.05	1.25 µg/L	89.7	70	150
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2035371)								
EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.02	µg/L	<0.02	0.5 µg/L	91.8	70	130
EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	0.05	µg/L	<0.05	1.25 µg/L	94.0	70	150
EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	0.05	µg/L	<0.05	1.25 µg/L	85.0	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	0.05	µg/L	<0.05	1.25 µg/L	101	70	150
EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	0.05	µg/L	<0.05	1.25 µg/L	100	70	150
EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.02	µg/L	<0.02	0.5 µg/L	79.2	70	130
EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.02	µg/L	<0.02	0.5 µg/L	100	70	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2035371)								
EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.05	µg/L	<0.05	0.5 µg/L	126	70	130
EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.05	µg/L	<0.05	0.5 µg/L	91.0	70	130
EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.05	µg/L	<0.05	0.5 µg/L	107	70	130
EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.05	µg/L	<0.05	0.5 µg/L	99.6	70	130

Matrix Spike (MS) Report

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

Sub-Matrix: **WATER**

				Matrix Spike (MS) Report			
				Spike	Spike Recovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG020F: Dissolved Metals by ICP-MS (QCLot: 2036690)							
ES1833778-002	Anonymous	EG020A-F: Arsenic	7440-38-2	1 mg/L	93.8	70	130
		EG020A-F: Cadmium	7440-43-9	0.25 mg/L	99.9	70	130

Matrix Spike (MS) Report

<i>Spike</i>	<i>SpikeRecovery(%)</i>	<i>Recovery Limits (%)</i>	
<i>Concentration</i>	<i>MS</i>	<i>Low</i>	<i>High</i>



Sub-Matrix: **WATER**

Sub-Matrix: WATER				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Recovery Limits (%)	
Laboratory sample ID	Client sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP231A: Perfluoroalkyl Sulfonic Acids (QCLot: 2035371) - continued							
EM1818113-035	Anonymous	EP231X: Perfluorobutane sulfonic acid (PFBS)	375-73-5	0.5 µg/L	92.2	50	130
		EP231X: Perfluoropentane sulfonic acid (PFPeS)	2706-91-4	0.5 µg/L	96.6	50	130
		EP231X: Perfluorohexane sulfonic acid (PFHxS)	355-46-4	0.5 µg/L	91.4	50	130
		EP231X: Perfluoroheptane sulfonic acid (PFHpS)	375-92-8	0.5 µg/L	87.8	50	130
		EP231X: Perfluorooctane sulfonic acid (PFOS)	1763-23-1	0.5 µg/L	89.0	50	130
		EP231X: Perfluorodecane sulfonic acid (PFDS)	335-77-3	0.5 µg/L	74.4	50	130
EP231B: Perfluoroalkyl Carboxylic Acids (QCLot: 2035371)							
EM1818113-035	Anonymous	EP231X: Perfluorobutanoic acid (PFBA)	375-22-4	2.5 µg/L	104	50	130
		EP231X: Perfluoropentanoic acid (PFPeA)	2706-90-3	0.5 µg/L	108	50	130
		EP231X: Perfluorohexanoic acid (PFHxA)	307-24-4	0.5 µg/L	102	50	130
		EP231X: Perfluoroheptanoic acid (PFHpA)	375-85-9	0.5 µg/L	95.6	50	130
		EP231X: Perfluorooctanoic acid (PFOA)	335-67-1	0.5 µg/L	95.0	50	130
		EP231X: Perfluorononanoic acid (PFNA)	375-95-1	0.5 µg/L	105	50	130
		EP231X: Perfluorodecanoic acid (PFDA)	335-76-2	0.5 µg/L	95.4	50	130
		EP231X: Perfluoroundecanoic acid (PFUnDA)	2058-94-8	0.5 µg/L	83.8	50	130
		EP231X: Perfluorododecanoic acid (PFDoDA)	307-55-1	0.5 µg/L	108	50	130
		EP231X: Perfluorotridecanoic acid (PFTrDA)	72629-94-8	0.5 µg/L	103	50	130
EP231X: Perfluorotetradecanoic acid (PFTeDA)	376-06-7	1.25 µg/L	95.1	50	150		
EP231C: Perfluoroalkyl Sulfonamides (QCLot: 2035371)							
EM1818113-035	Anonymous	EP231X: Perfluorooctane sulfonamide (FOSA)	754-91-6	0.5 µg/L	99.0	50	130
		EP231X: N-Methyl perfluorooctane sulfonamide (MeFOSA)	31506-32-8	1.25 µg/L	94.2	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamide (EtFOSA)	4151-50-2	1.25 µg/L	85.2	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoethanol (MeFOSE)	24448-09-7	1.25 µg/L	103	50	150
		EP231X: N-Ethyl perfluorooctane sulfonamidoethanol (EtFOSE)	1691-99-2	1.25 µg/L	104	50	150
		EP231X: N-Methyl perfluorooctane sulfonamidoacetic acid (MeFOSAA)	2355-31-9	0.5 µg/L	84.8	50	130
		EP231X: N-Ethyl perfluorooctane sulfonamidoacetic acid (EtFOSAA)	2991-50-6	0.5 µg/L	88.8	50	130
EP231D: (n:2) Fluorotelomer Sulfonic Acids (QCLot: 2035371)							
EM1818113-035	Anonymous	EP231X: 4:2 Fluorotelomer sulfonic acid (4:2 FTS)	757124-72-4	0.5 µg/L	121	50	130
		EP231X: 6:2 Fluorotelomer sulfonic acid (6:2 FTS)	27619-97-2	0.5 µg/L	97.6	50	130
		EP231X: 8:2 Fluorotelomer sulfonic acid (8:2 FTS)	39108-34-4	0.5 µg/L	121	50	130
		EP231X: 10:2 Fluorotelomer sulfonic acid (10:2 FTS)	120226-60-0	0.5 µg/L	107	50	130

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES1833894	Page	: 1 of 8
Client	: SENVERSA PTY LTD	Laboratory	: Environmental Division Sydney
Contact	: ROXANNE MCKINNON	Telephone	: +6138549 9644
Project	: S16913 Phase 2 Due Diligence	Date Samples Received	: 13-Nov-2018
Site	: ----	Issue Date	: 19-Nov-2018
Sampler	: Michelle Damasio	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO** Method Blank value outliers occur.
- **NO** Duplicate outliers occur.
- **NO** Laboratory Control outliers occur.
- **NO** Matrix Spike outliers occur.
- For all regular sample matrices, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- Quality Control Sample Frequency Outliers exist - please see following pages for full details.



Outliers : Frequency of Quality Control Samples

Matrix: **WATER**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	10.00	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)					
PAH/Phenols (GC/MS - SIM)	0	8	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	0	4	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	0	1	0.00	5.00	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	0	3	0.00	5.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EG020F: Dissolved Metals by ICP-MS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG020A-F) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	12-May-2019	✔
EG035F: Dissolved Mercury by FIMS							
Clear Plastic Bottle - Nitric Acid; Filtered (EG035F) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	11-Dec-2018	✔
EK055G: Ammonia as N by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK055G) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	11-Dec-2018	✔
EK057G: Nitrite as N by Discrete Analyser							
Amber Glass Bottle - Unpreserved (EK057G) QC201_13112018	13-Nov-2018	----	----	----	13-Nov-2018	15-Nov-2018	✔
EK059G: Nitrite plus Nitrate as N (NOx) by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK059G) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	11-Dec-2018	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EK061G: Total Kjeldahl Nitrogen By Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK061G) QC201_13112018	13-Nov-2018	14-Nov-2018	11-Dec-2018	✔	14-Nov-2018	11-Dec-2018	✔
EK067G: Total Phosphorus as P by Discrete Analyser							
Clear Plastic Bottle - Sulfuric Acid (EK067G) QC201_13112018	13-Nov-2018	14-Nov-2018	11-Dec-2018	✔	14-Nov-2018	11-Dec-2018	✔
EP068A: Organochlorine Pesticides (OC)							
Amber Glass Bottle - Unpreserved (EP068) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✔	15-Nov-2018	24-Dec-2018	✔
EP068B: Organophosphorus Pesticides (OP)							
Amber Glass Bottle - Unpreserved (EP068) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✔	15-Nov-2018	24-Dec-2018	✔
EP074A: Monocyclic Aromatic Hydrocarbons							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074B: Oxygenated Compounds							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074C: Sulfonated Compounds							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074D: Fumigants							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074E: Halogenated Aliphatic Compounds							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074F: Halogenated Aromatic Compounds							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074G: Trihalomethanes							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP074H: Naphthalene							
Clear glass VOC vial - HCl (EP074) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✔	15-Nov-2018	27-Nov-2018	✔
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP075(SIM)) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✔	15-Nov-2018	24-Dec-2018	✔



Matrix: **WATER**

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP075C: Phthalate Esters							
Amber Glass Bottle - Unpreserved (EP075) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✓	15-Nov-2018	24-Dec-2018	✓
EP080/071: Total Petroleum Hydrocarbons							
Amber Glass Bottle - Unpreserved (EP071) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✓	15-Nov-2018	24-Dec-2018	✓
Clear glass VOC vial - HCl (EP080) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✓	15-Nov-2018	27-Nov-2018	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Amber Glass Bottle - Unpreserved (EP071) QC201_13112018	13-Nov-2018	14-Nov-2018	20-Nov-2018	✓	15-Nov-2018	24-Dec-2018	✓
Clear glass VOC vial - HCl (EP080) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✓	15-Nov-2018	27-Nov-2018	✓
EP080: BTEXN							
Clear glass VOC vial - HCl (EP080) QC201_13112018	13-Nov-2018	15-Nov-2018	27-Nov-2018	✓	15-Nov-2018	27-Nov-2018	✓
EP231A: Perfluoroalkyl Sulfonic Acids							
HDPE (no PTFE) (EP231X) QC201_13112018	13-Nov-2018	14-Nov-2018	12-May-2019	✓	14-Nov-2018	12-May-2019	✓
EP231B: Perfluoroalkyl Carboxylic Acids							
HDPE (no PTFE) (EP231X) QC201_13112018	13-Nov-2018	14-Nov-2018	12-May-2019	✓	14-Nov-2018	12-May-2019	✓
EP231C: Perfluoroalkyl Sulfonamides							
HDPE (no PTFE) (EP231X) QC201_13112018	13-Nov-2018	14-Nov-2018	12-May-2019	✓	14-Nov-2018	12-May-2019	✓
EP231D: (n:2) Fluorotelomer Sulfonic Acids							
HDPE (no PTFE) (EP231X) QC201_13112018	13-Nov-2018	14-Nov-2018	12-May-2019	✓	14-Nov-2018	12-May-2019	✓
EP231P: PFAS Sums							
HDPE (no PTFE) (EP231X) QC201_13112018	13-Nov-2018	14-Nov-2018	12-May-2019	✓	14-Nov-2018	12-May-2019	✓
MW006: Faecal Coliforms & E.coli by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW006) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	14-Nov-2018	✓
MW007: Coliforms by MF							
Sterile Plastic Bottle - Sodium Thiosulfate (MW007) QC201_13112018	13-Nov-2018	----	----	----	14-Nov-2018	14-Nov-2018	✓



Quality Control Parameter Frequency Compliance

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

Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Laboratory Duplicates (DUP)							
Ammonia as N by Discrete analyser	EK055G	2	20	10.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	3	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	2	6	33.33	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	2	11	18.18	10.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	2	19	10.53	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	10.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	2	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	3	13	23.08	15.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	3	17	17.65	15.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	1	8	12.50	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Matrix: **WATER**

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

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	Method	QC	Regular	Actual	Expected	Evaluation	
Method Blanks (MB) - Continued							
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	4	25.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	1	1	100.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Ammonia as N by Discrete analyser	EK055G	1	20	5.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Mercury by FIMS	EG035F	1	3	33.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Dissolved Metals by ICP-MS - Suite A	EG020A-F	1	6	16.67	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite and Nitrate as N (NOx) by Discrete Analyser	EK059G	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Nitrite as N by Discrete Analyser	EK057G	1	11	9.09	5.00	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	0	8	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	1	19	5.26	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	0	4	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Semivolatile Organic Compounds	EP075	0	1	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Phosphorus as P By Discrete Analyser	EK067G	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	0	3	0.00	5.00	✗	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	5	20.00	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Volatile Organic Compounds	EP074	1	17	5.88	5.00	✓	NEPM 2013 B3 & ALS QC Standard



Brief Method Summaries

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

Analytical Methods	Method	Matrix	Method Descriptions
Dissolved Metals by ICP-MS - Suite A	EG020A-F	WATER	In house: Referenced to APHA 3125; USEPA SW846 - 6020, ALS QWI-EN/EG020. Samples are 0.45µm filtered prior to analysis. The ICPMS technique utilizes a highly efficient argon plasma to ionize selected elements. Ions are then passed into a high vacuum mass spectrometer, which separates the analytes based on their distinct mass to charge ratios prior to their measurement by a discrete dynode ion detector.
Dissolved Mercury by FIMS	EG035F	WATER	In house: Referenced to AS 3550, APHA 3112 Hg - B (Flow-injection (SnCl ₂)(Cold Vapour generation) AAS) Samples are 0.45µm filtered prior to analysis. FIM-AAS is an automated flameless atomic absorption technique. A bromate/bromide reagent is used to oxidise any organic mercury compounds in the filtered sample. The ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Ammonia as N by Discrete analyser	EK055G	WATER	In house: Referenced to APHA 4500-NH ₃ G Ammonia is determined by direct colorimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite as N by Discrete Analyser	EK057G	WATER	In house: Referenced to APHA 4500-NO ₂ - B. Nitrite is determined by direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Nitrate as N by Discrete Analyser	EK058G	WATER	In house: Referenced to APHA 4500-NO ₃ - F. Nitrate is reduced to nitrite by way of a chemical reduction followed by quantification by Discrete Analyser. Nitrite is determined separately by direct colourimetry and result for Nitrate calculated as the difference between the two results. This method is compliant with NEPM (2013) Schedule B(3)
Nitrite and Nitrate as N (NO _x) by Discrete Analyser	EK059G	WATER	In house: Referenced to APHA 4500-NO ₃ - F. Combined oxidised Nitrogen (NO ₂ +NO ₃) is determined by Chemical Reduction and direct colourimetry by Discrete Analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Kjeldahl Nitrogen as N By Discrete Analyser	EK061G	WATER	In house: Referenced to APHA 4500-Norg D (In house). An aliquot of sample is digested using a high temperature Kjeldahl digestion to convert nitrogenous compounds to ammonia. Ammonia is determined colorimetrically by discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Total Nitrogen as N (TKN + Nox) By Discrete Analyser	EK062G	WATER	In house: Referenced to APHA 4500-Norg / 4500-NO ₃ -. This method is compliant with NEPM (2013) Schedule B(3)
Total Phosphorus as P By Discrete Analyser	EK067G	WATER	In house: Referenced to APHA 4500-P H, Jirka et al (1976), Zhang et al (2006). This procedure involves sulphuric acid digestion of a sample aliquot to break phosphorus down to orthophosphate. The orthophosphate reacts with ammonium molybdate and antimony potassium tartrate to form a complex which is then reduced and its concentration measured at 880nm using discrete analyser. This method is compliant with NEPM (2013) Schedule B(3)
Pesticides by GCMS	EP068	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH - Semivolatile Fraction	EP071	WATER	In house: Referenced to USEPA SW 846 - 8015A The sample extract is analysed by Capillary GC/FID and quantification is by comparison against an established 5 point calibration curve of n-Alkane standards. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)



Analytical Methods	Method	Matrix	Method Descriptions
Volatile Organic Compounds	EP074	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
Semivolatile Organic Compounds	EP075	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
PAH/Phenols (GC/MS - SIM)	EP075(SIM)	WATER	In house: Referenced to USEPA SW 846 - 8270D Sample extracts are analysed by Capillary GC/MS in SIM Mode and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM (2013) Schedule B(3)
TRH Volatiles/BTEX	EP080	WATER	In house: Referenced to USEPA SW 846 - 8260B Water samples are directly purged prior to analysis by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. Alternatively, a sample is equilibrated in a headspace vial and a portion of the headspace determined by GCMS analysis. This method is compliant with the QC requirements of NEPM (2013) Schedule B(3)
Per- and Polyfluoroalkyl Substances (PFAS) by LCMSMS	EP231X	WATER	In house: Direct injection analysis of fresh waters after dilution (1:1) with methanol. Analysis by LC-Electrospray-MS-MS, Negative Mode using MRM. Where commercially available, isotopically labelled analogues of the target analytes are used as internal standards for quantification. Where a labelled analogue is not commercially available, the internal standard with similar chemistry and the closest retention time to the target is used for quantification. The DQO for internal standard response is 50-150% of that established at initial calibration. PFOS is quantified using a certified, traceable standard consisting of linear and branched PFOS isomers. This method complies with the quality control definitions as stated in QSM 5.1. Data is reviewed in line with the DQOs as stated in QSM5.1
Thermotolerant Coliforms & E.coli by Membrane Filtration	MW006	WATER	AS 4276.7 2007
Coliforms by Membrane Filtration	MW007	WATER	AS 4276.5 - 2007
Preparation Methods	Method	Matrix	Method Descriptions
TKN/TP Digestion	EK061/EK067	WATER	In house: Referenced to APHA 4500 Norg - D; APHA 4500 P - H. This method is compliant with NEPM (2013) Schedule B(3)
Preparation for PFAS in water.	EP231-PR	WATER	Method presumes direct injection without workup. Preparation includes addition of internal standard and surrogate, and filtration prior to analysis.
Separatory Funnel Extraction of Liquids	ORG14	WATER	In house: Referenced to USEPA SW 846 - 3510B 100 mL to 1L of sample is transferred to a separatory funnel and serially extracted three times using 60mL DCM for each extract. The resultant extracts are combined, dehydrated and concentrated for analysis. This method is compliant with NEPM (2013) Schedule B(3) . ALS default excludes sediment which may be resident in the container.
Volatiles Water Preparation	ORG16-W	WATER	A 5 mL aliquot or 5 mL of a diluted sample is added to a 40 mL VOC vial for sparging.

SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : ES1833894

Client : SENVERSA PTY LTD Contact : ROXANNE MCKINNON Address : Level 5, Grafton Bond Building 201 Kent Street SYDNEY NSW 2000 E-mail : roxanne.mckinnon@senversa.com.au Telephone : ---- Facsimile : ---- Project : S16913 Phase Z. Due Diligence Order number : ---- C-O-C number : ---- Site : ---- Sampler : Michelle Damasio	Laboratory : Environmental Division Sydney Contact : Larissa Burns Address : 277-289 Woodpark Road Smithfield NSW Australia 2164 E-mail : Larissa.burns@alsglobal.com Telephone : +6138549 9644 Facsimile : +61-2-8784 8500 Page : 1 of 3 Quote number : EM2017SENV0009 (EN/333 (secondary work only)) QC Level : NEPM 2013 B3 & ALS QC Standard

Dates

Date Samples Received : 13-Nov-2018 17:13	Issue Date : 13-Nov-2018
Client Requested Due Date : 19-Nov-2018	Scheduled Reporting Date : 19-Nov-2018

Delivery Details

Mode of Delivery : Client Drop Off	Security Seal : Not Available
No. of coolers/boxes : 1	Temperature : 12.8°C - Ice present
Receipt Detail :	No. of samples received / analysed : 1 / 1

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- **Sample(s) requiring volatile organic compound analysis received in airtight containers (ZHE).**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Analytical work for this work order will be conducted at ALS Sydney.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months) from receipt of samples.



Sample Container(s)/Preservation Non-Compliances

All comparisons are made against pretreatment/preservation AS, APHA, USEPA standards.

- No sample container / preservation non-compliance exists.

Summary of Sample(s) and Requested Analysis

Some items described below may be part of a laboratory process necessary for the execution of client requested tasks. Packages may contain additional analyses, such as the determination of moisture content and preparation tasks, that are included in the package.

If no sampling time is provided, the sampling time will default 00:00 on the date of sampling. If no sampling date is provided, the sampling date will be assumed by the laboratory and displayed in brackets without a time component

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP074 (water) Volatile Organic Compounds	WATER - EP075C Phthalates SVOC - Phthalate Esters	WATER - MW006 (FC) Thermotolerant Coliforms by Membrane Filtration	WATER - MW007 Total Coliforms by Membrane Filtration	WATER - NT-08 Total Nitrogen + NO2 + NO3 + NH3 + Total P	WATER - W-12 OC/OP Pesticides	WATER - W-26 TRH/BTEXN/PAH/8 Metals
ES1833894-001	13-Nov-2018 00:00	QC201_1332018	✓	✓	✓	✓	✓	✓	✓

Matrix: **WATER**

Laboratory sample ID	Client sampling date / time	Client sample ID	WATER - EP231X PFAS - Full Suite (28 analytes)
ES1833894-001	13-Nov-2018 00:00	QC201_1332018	✓

Proactive Holding Time Report

Sample(s) have been received within the recommended holding times for the requested analysis.



Requested Deliverables

IAN BATTERLEY

- *AU Certificate of Analysis - NATA (COA)	Email	ian.batterley@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	ian.batterley@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	ian.batterley@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	ian.batterley@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	ian.batterley@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	ian.batterley@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	ian.batterley@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	ian.batterley@senversa.com.au

MICHELLE DAMASIO

- *AU Certificate of Analysis - NATA (COA)	Email	michelle.damasio@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	michelle.damasio@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	michelle.damasio@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	michelle.damasio@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	michelle.damasio@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	michelle.damasio@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	michelle.damasio@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	michelle.damasio@senversa.com.au

ROXANNE MCKINNON

- *AU Certificate of Analysis - NATA (COA)	Email	roxanne.mckinnon@senversa.com.au
- *AU Interpretive QC Report - DEFAULT (Anon QCI Rep) (QCI)	Email	roxanne.mckinnon@senversa.com.au
- *AU QC Report - DEFAULT (Anon QC Rep) - NATA (QC)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Sample Receipt Notification - Environmental HT (SRN)	Email	roxanne.mckinnon@senversa.com.au
- A4 - AU Tax Invoice (INV)	Email	roxanne.mckinnon@senversa.com.au
- Chain of Custody (CoC) (COC)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ENMRG (ENMRG)	Email	roxanne.mckinnon@senversa.com.au
- EDI Format - ESDAT (ESDAT)	Email	roxanne.mckinnon@senversa.com.au

SUPPLIER ACCOUNTS

- A4 - AU Tax Invoice (INV)	Email	supplieraccounts@senversa.com.au

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* michelle.damasio
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an.batterley
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senversa Pty Ltd
www.senversa.com.au
ABN 89 132 231 380

Laboratory:
Address:
Contact:
Phone:

AUS

(Growthrest)

Job Number: 516913
Project Name: Phase 2 - Due Diligence
Sampled By: Michelle Damasio
Project Manager: Roxanne McKinnon
Email Report To: (P)
Purchase Order: —
Quote No: —
Turn Around Time: 3 TAT
Page: 1 of 4
Phone/Mobile: 0450 484 448

Sample Information
Lab ID Sample ID Matrix Date
SC201-15112018 WATER 13/11/18
Container Information
Type / Code Total Bottles
ZV+10A+17+ 7
15TH + 157+1N

Environmental Division
Sydney
Work Order Reference
ES1833894



Telephone : + 61-2-8784 8555

Chain of Custody Documentation

Analysis Required									
TRH: BTEX: PAH	X	VOCs: PFAS	X	OC2/OP2	X	Ammonia	X	Coliforms (faecal)	X
						Pathogens	X		
						Nitrates	X		
						Nitrites	X		
						Heavy Metals	X		
									SHORT HOLDING TIME

ES1833894
WO # Assigned at
ALS Crows Nest

Sampler Name: Michelle Damasio
Signature: [Signature]
Date: 13/11/2018

Method of Shipment (if applicable):			
Name/Signature:	Carrier / Reference #:	Date:	Received by:
Of: ALS Crows Nest	Date/Time:	Date: 13/11/18	Name/Signature: Sep [Signature]
Name/Signature:	Carrier / Reference #:	Date:	Time: 17/13 12.8.0
Of: JUSTIN	Date/Time:	Date: 13/11	Name/Signature: [Signature]
Name/Signature:	Carrier / Reference #:	Date:	Time: 7pm
Of: ALS Smithfield	Date/Time:	Date:	Name/Signature:
Name/Signature:	Carrier / Reference #:	Date:	Time:
Of:	Date/Time:	Date:	Time:

Water Container Codes: P = Unpreserved Plastic; N = Nitric Acid (HNO₃) Preserved Plastic; ORC = Nitric Preserved ORC; SH = Sodium Hydroxide (NaOH)/Cadmium (Cd) Preserved; S = Sodium Hydroxide Preserved Plastic; ST = Sodium Trisulfate Preserved Plastic
V = VOA Vial Hydrochloric Acid (HCl) Preserved; VS = VOA Vial Sulphuric Preserved; VSA = Sulphuric Preserved Amber Glass; H = HCl Preserved Plastic; HS = HCl Preserved Speciation Bottle / SP = Sulphuric Preserved Plastic
F = Formaldehyde Preserved Glass; Z = Zinc Acetate Preserved Bottle; E = EDTA Preserved Bottles; ST = Sterile Bottle; UA = Unpreserved Amber Glass; L = Lugol's Iodine Preserved white plastic bottle; SW = sulfuric acid preserved wide mouth glass jar

Completed by:
Checked by:



Appendix D: Calibration Certificates

Oil / Water Interface Meter

Instrument **Geotech Interface Meter (60M)**
Serial No. **3887**



Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Compartment	✓	
	Capacity	✓	
Probe	Cleaned/Decon.	✓	
	Operation	✓	
Connectors	Condition	✓	
		✓	
Tape Check	Cleaned	✓	
Connectors	Checked for cuts	✓	
Instrument Test	At surface level	✓	

Certificate of Calibration

This is to certify that the above instrument has been cleaned and tested.

Calibrated by:

SB

Sophie Boler

Calibration date:

9/11/2018

Next calibration due:

8/01/2019

Gas Calibration Certificate

Instrument **GFM430**
 Serial No. **11259**
 Sensors **CH₄, CO₂, O₂, H₂S, LEL**



Air-Met Scientific Pty Ltd
 1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
	Recharge OK?	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
Pump	Operation	✓	
	Filter	✓	
	Flow	✓	
	Valves, Diaphragm	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	CH ₄	✓	
	CO ₂	✓	
	O ₂	✓	
	H ₂ S	✓	
	LEL	✓	
	CO	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version		
Datalogger	Operation		
Download	Operation		
Other tests:			

Certificate of Calibration

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

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No	Instrument Reading
O ₂		20.9% Vol O ₂		Fresh Air	20.8%
CO ₂		40% Vol CO ₂	NATA	SY136	39.5%
CH ₄		60% Vol CH ₄	NATA	SY136	59.6%

Calibrated by:

Sarah Lian

Calibration date: 12/11/2018

Next calibration due: 14/05/2019

Senversa PID Calibration Log

Project No:	S16913	Project:	Phase 2 Due Diligence
PID Unit Type:	Mini2ae 300	Regulator Model No:	-
Model No:	-	Serial No:	-

Unit power on	Yes / No	Date/time correct	Yes / No
Fully charged	Yes / No	Pump working	Yes / No
Alarm functioning	Yes / No	Backlight functioning	Yes / No
Filter clean	Yes / No	Inlet flow clear	Yes / No

Calibration start time	7:15am	Calibration end time	7:20am
PID	Span Gas	Value	Reading
	Air	0.0 ppm	0.0ppm
	Isobutylene	100 ppm	100.4ppm

Comments
OK ✓

Calibration Successful:

Yes / No

Calibration Date :

30/10/18

Calibrated By:

AC [Signature]

Senversa PID Calibration Log

Project No:	516913	Project:	Phase 2 Due Diligence
PID Unit Type:	mrh12ae 30w	Regulator Model No:	
Model No:		Serial No:	

Unit power on	Yes / No	Date/time correct	Yes / No
Fully charged	Yes / No	Pump working	Yes / No
Alarm functioning	Yes / No	Backlight functioning	Yes / No
Filter clean	Yes / No	Inlet flow clear	Yes / No

Calibration start time	7:20 am	Calibration end time	7:25 am
PID	Span Gas	Value	Reading
	Air	0.0 ppm	0.0 ppm
	Isobutylene	100 ppm	100.7 ppm

Comments	ok ✓

Calibration Successful: Yes / No

Calibration Date : _____

Calibrated By: AC [Signature]

Senversa PID Calibration Log

Project No:	516913	Project:	phase 2 due diligence
PID Unit Type:	Mini2ae 3000	Regulator Model No:	-
Model No:	-	Serial No:	-

Unit power on	Yes / No	Date/time correct	Yes / No
Fully charged	Yes / No	Pump working	Yes / No
Alarm functioning	Yes / No	Backlight functioning	Yes / No
Filter clean	Yes / No	Inlet flow clear	Yes / No

Calibration start time	7:30am	Calibration end time	7:55am
PID	Span Gas	Value	Reading
	Air	0.0 ppm	0.0ppm
	Isobutylene	100 ppm	101.8ppm

Comments
OK ✓

Calibration Successful: Yes / No

Calibration Date: 31/10/18

Calibrated By: AL 09

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 17C102195



Air-Met Scientific Pty Ltd
1300 137 067

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

Certificate of Calibration

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

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 7.00		pH 7.00		317272	pH 6.98
2. pH 4.00		pH 4.00		320612	pH 4.03
3. pH 10.00		pH 10.00		320322	pH 9.62
3. mV		234mV		321773/325420	233.8mV
4. EC		2.76mS		320326	2.74mS
5. D.O		0.00ppm		10175	0.03ppm
6. Temp		20.4°C		MultiTherm	20.4°C

Calibrated by: *Sarah Lian*

Sarah Lian

Calibration date: 12/11/2018

Next calibration due: 12/12/2018



Appendix E: Field Forms

Landfill Gas Bore Monitoring Record

546913-13/11/2018
w/ PZ

Project No:	546913	Project:	Phase 2 Due Diligence
Date:	13/11/2018	Client:	Airtrunk
Site/Address:	4 Sirius Rd, Lane Cove	Field Personnel:	AD
Instruments Used:	GF M 340 - Serial no 11259	Weather/Wind:	Partially Cloud - 20-24°C - 10km/h N wind

Bore ID	Start Time	Atmos- pheric Press. (mb)	Relative Press. (mb)	Relative Press. Manom- eter	Methane % v/v		Carbon Dioxide % v/v		Oxygen % v/v		Pump Time Steady	Flow (L/min)	Other: H ₂ S, CO		Water Level (m bTOC / dry)	Depth of Well (m bTOC)	Screen Interval (m bTOC)
					Max.	Steady	Max.	Steady	Min.	Steady							
MW03	7:52				0.0	0	20.7	18.5	1.6	1.6		0.0		0.0			
	7:53				0.0	0.0	18.8	18.5	1.6	1.6				0.0		3.989	7.47
	7:54				0.0	0.0	18.6	18.6	1.5	1.6				0.0			
	7:55				0.0	0.0	18.7	18.7	1.5	1.5				0.0			
	7:56				0.0	0.0	18.7	18.7	1.4	1.4				0.0			
	7:57				0.0	0.0	18.8	18.8	1.4	1.4				0.0			
	7:58				0.0	0.0	18.8	18.8	1.4	1.4				0.0			
	7:59				0.0	0.0	18.8	18.8	1.4	1.4				0.0			
MW05	06:12				10.0	10.0	20.3	19.8	0.7	0.7				0.0			
	08:13				0.0	0.0	19.9	19.8	0.7	0.7				0.0			
	08:14				0.0	0.0	19.8	19.8	0.7	0.7				0.0			
	08:15				0.0	0.0	19.8	19.8	0.7	0.7				0.0			



Groundwater Gauging Record

Job Number:	S16913	Project Name:	Phase 2 Due Diligence
Date:	13/11/2018	Client:	AirTrunk
Location:	AirTrunk	Field Personnel:	MD
Probe Type/ID:	Senvorsa		

Well ID	Gauged By	Time	Depth to NAPL (m bTOC) ¹	Static Water Level (m bTOC) ¹	NAPL (m)	Total Well Depth (m bTOC) ²	Well Condition / Comments (i.e. odours, product description)
MW01	MD	13/11/2018 8:15	-	4.215	-	11.01	New well; no odour.
MW03	MD	13/11/2018 7:40	-	3.989	-	7.47	New well (groundwater / gas); slight hydrocarbon odour.
MW04	MD	13/11/2018 8:05	-	14.216	-	18.13	New well; no odour.
MW05	MD	13/11/2018 7:56	-	3.443	-	6.29	New well (groundwater / gas); slight hydrocarbon odour.

Notes
¹ Recorded to nearest 0.001 m; ² Recorded to nearest 0.01 m; All depths to be recorded to nearest mm.



S16913 Groundwater Monitoring Event Field Forms 13112018



Groundwater Sampling and Field Chemical Characteristics Record

Site and Job Number					Well Information									
Job Number:	S16913				Well ID:	MW03		Gatic Type (old, new):	New					
Project Name:	Phase 2 Due Diligence				Well Construction (flush, stickup):	Stickup		Well Diameter (mm):	50					
Client:	AirTrunk				Surface Casing Height (m bgl):	-		Key Type (e.g. 8mm gatic):	None					
Location:	Lane Cove				Survey Mark Present?:	Yes		Well Condition:	New					
Well Gauging					Well Purging									
Date:	2/01/1900	Time:	1:04 PM	Probe Type & ID No.	IP 60M - 3887		Date:	13/11/2018	Start	1:08 PM	Finish	1:25 PM		
Depth to Product:	-		m bTOC	Product Thickness (m):	-		Method (bailer, low flow, other):	Low flow		Depth to Water with Pump:	-			
Depth to Water:	3.984		m bTOC	Product Description:	-		Depth (pump intake setting bTOC):	-		Sediment Thickness in Well (m)	-			
Total Depth of Well:	7.47		m bTOC	Product Confirmed by Bailer:	N/A		Total Volume Purged (L): [#]	2.8		Screen Interval (m bgl):	-			
Field Chemistry					Observations									
Time	Pump Rate	Refill / Discharge	Volume (L)	WL (m bTOC)	DO (mg/L)** ±10% * ^	EC (µS/cm) ±3% *	pH ±0.05 *	Redox (mV) ±10mV *	Temp (°C) ±10% *	Turbidity	Colour	Odour	Sheen	
1:10 PM	2	-	0.5	4.295	0.33	1694	6.32	-65.4	20.3	Moderately turbid	light brown	no odour	slight sheen	
1:13 PM	2	-	0.9	4.302	0.17	1677	6.3	-65.3	20.1	Slightly turbid	light brown	no odour	slight sheen	
1:16 PM	2	-	1.3	4.964	0.12	1701	6.29	-68.9	21	Non-turbid	yellow	no odour	slight sheen	
1:19 PM	2	-	1.8	4.397	0.06	1704	6.33	-70.6	20.9	Non-turbid	yellow	no odour	slight sheen	
1:22 PM	2	-	2.3	4.442	0.06	1671	6.36	-78.1	20.8	Non-turbid	yellow	no odour	slight sheen	
1:25 PM	2	-	2.8	4.501	0.06	1656	6.37	-79.5	20.9	Non-turbid	yellow	no odour	slight sheen	
Sampling					Purging / Sampling Comments									
Date	13/11/2018	Start	1:26 PM	Finish	2:02 PM	Recharge Ability:		Avg 0.1-0.4L/min		Other Comments:				
Sampling Method (bailer, low flow, other):			Low flow			Air Bubbles in Vials?		No		Expressive foam / bubbles layer on the sample. Intra and inter-laboratory taken.				
SWL at end of Sampling:			4.761 m bTOC			Reaction with Preservatives?		Yes						
Sample No:	Container	No. Samples	Container	No. Samples	QA QC	Laboratory	Headspace PID Readings:		-					
MW03	Metals (Filtered)	1	Pres Inorganics	1	Y ■ N □	MGT Eurofins	Any Odours During Sampling?		no odour					
	VOC (HCl)	2	PFOA/PFAS/PFOS/AF FF	1	Y ■ N □		Purge Volume (if required):		6.84					
	SVOCs	1	Microbiology	1	Y ■ N □									
Total Containers		7		Waste Disposal:		N/A		* Purge Volume = [TD (mbTOC)-SWL (mbTOC)] x [(D (mm))/2]^2 x 0.00314 (only relevant non-low flow methods)						
Authorisation					* Parameters considered stable when three consecutive readings three to five minutes apart are all within stated criteria (EPA Pub 669)									
Sampled By:		MD		Signature:				** If using galvanic DO probe (yellow cap), highest DO reading during discharge should be recorded.						
Checked By:				Signature:				^ Or sensor accuracy, whichever is greater. YSI ProPlus sensor accuracy is 0.2 mg/L.						



Groundwater Sampling and Field Chemical Characteristics Record

Site and Job Number						Well Information							
Job Number:	S16913					Well ID:	MW04		Gatic Type (old, new):	New			
Project Name:	Phase 2 Due Diligence					Well Construction (flush, stickup):	Stickup		Well Diameter (mm):	50			
Client:	AirTrunk					Surface Casing Height (m bgl):	-		Key Type (e.g. 8mm gatic):	None			
Location:	Lane Cove					Survey Mark Present?:	Yes		Well Condition:	New			
Well Gauging						Well Purging							
Date:	13/11/2018	Time:	8:20 AM	Probe Type & ID No.	IP 60M - 3887	Date:	13/11/2018	Start	10:10 AM	Finish			
Depth to Product:	-	m bTOC	Product Thickness (m):	-		Method (bailer, low flow, other):	Low flow		Depth to Water with Pump:	-			
Depth to Water:	14.216	m bTOC	Product Description:	-		Depth (pump intake setting bTOC):	-		Sediment Thickness in Well (m)	-			
Total Depth of Well:	18.13	m bTOC	Product Confirmed by Bailer:	N/A		Total Volume Purged (L): [#]	5		Screen Interval (m bgl):	-			
Field Chemistry						Observations							
Time	Pump Rate	Refill / Discharge	Volume (L)	WL (m bTOC)	DO (mg/L)** ±10% * ^	EC (µS/cm) ±3% *	pH ±0.05 *	Redox (mV) ±10mV *	Temp (°C) ±10% *	Turbidity	Colour	Odour	Sheen
	-	-	1		2.67	985	5.85	71.3	20.8	Highly turbid	brown	no odour	no sheen
	-	-	2		3.03	741	5.05	133.4	19.1	Moderately turbid	brown	no odour	no sheen
	-	-	3		3.09	725	4.97	146.1	19	Moderately turbid	light brown	no odour	no sheen
	-	-	4		3.11	727	4.98	149.9	19.3	Moderately turbid	light brown	no odour	no sheen
	-	-	5		3.15	720	4.97	152.8	19.7	Moderately turbid	light brown	no odour	no sheen
Sampling						Purging / Sampling Comments							
Date	13/11/2018	Start	10:31 AM	Finish	10:51 AM		Recharge Ability:	Poor <0.1L/min		Other Comments: Water level to deep for peristaltic pump. No groundwatwer was purged after few attempts. Well sampled via bailer.			
Sampling Method (bailer, low flow, other):			Bailer			Air Bubbles in Vials?	No						
SWL at end of Sampling:			16.597 m bTOC			Reaction with Preservatives?	No						
Sample No:	Container	No. Samples	Container	No. Samples	QA QC	Laboratory	Headspace PID Readings:	-					
MW04	Metals (Filtered)	1	Pres Inorganics	1	Y □ N ■	MGT Eurofins	Any Odours During Sampling?						
	VOC (HCl)	2	PFOA/PFAS/PFOS/AF FF	1	Y □ N ■		no odour						
	SVOCs	1	Microbiology	1	Y □ N ■		Purge Volume (if required): 7.68						
Total Containers		7	Waste Disposal:	N/A			* Purge Volume = [TD (mbTOC)-SWL (mbTOC)] x [(D (mm))/2]^2 x 0.00314 (only relevant non-low flow methods)						
Authorisation						* Parameters considered stable when three consecutive readings three to five minutes apart are all within stated criteria (EPA Pub 669)							
Sampled By:	MD	Signature:				** If using galvanic DO probe (yellow cap), highest DO reading during discharge should be recorded.							
Checked By:		Signature:				^ Or sensor accuracy, whichever is greater. YSI ProPlus sensor accuracy is 0.2 mg/L.							

S16913 Groundwater Monitoring Event Field Forms 13112018



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