APPENDIX I

JBS&G (52401-108586)

3 May 2017

Andrew Young
Proactive Management Solutions Pty Ltd
Via email: ayoung@eastquarter.com.au

Discharge Impact Assessment – 191 Miller Road, Chester Hill, NSW

Dear Mr Young,

1. Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Builders Recycling Operations Pty Ltd (the client), to provide environmental consultancy services for the property located at 191 Miller Street, Chester Hill, NSW (the site).

The site is currently subject to an environmental protection licence (EPL) 20421 in which a recent Notice of Licence Variation (EPA 2016[1]) was issued. The NSW EPA requires a Water Management Plan (WMP) that incorporates the following:

- A Surface Water Characterisation Assessment;
- A Groundwater Characterisation Assessment; and
- A Discharge Impact Assessment (DIA).

The WPM must also include:

- an investigation of all practical measures that could be taken to avoid or minimise pollution;
- justification for rejecting any options assessed; and
- a program for implementation of preferred mitigation measures including set timeframes; and establishment of an ongoing runoff and discharge monitoring program.

JBS&G previously submitted a DIA (JBS&G 2017[2]) that includes an assessment of surface water and groundwater at the site. The EPA provided comment on the DIA in correspondence dated 7 April 2017. This letter provides comment on the concerns raised by the EPA and includes a revised DIA as **Attachment 2**.

It is noted that the revised DIA is not intended to fulfil all the requirements of the WMP. It is understood that the client has committed to prepare a WMP that incorporates the findings of the DIA (prepared by JBS&G) and a revised Site Stormwater Audit Report (SSA) (prepared by LP Consulting) consistent with the requirements specified by the NSW EPA.

2. EPA Comments

An investigation of all practical measures that could be taken to avoid or minimise pollution with a justification for rejecting any options assessed.

[1] *Notice of Variation Licence No. 20421*, Notice Number 1546195, 191 Miller Road Chester Hill, NSW, prepared by NSW EPA, file number EF14/22270 (EPA 2016).
[2] *Discharge Impact Assessment*, 191 Miller Street, 27 March 2017, JBS&G Pty Lty (JBS&G 2017)

This is to be addressed in the revision of the SSA prepared by LP consulting.

A program for implementation of mitigation measures. You must commit to dates when mitigation measures will be implemented.

This is to be addressed in the WMP to be prepared by the client.

An ongoing monitoring program.

A recommended monitoring program has been detailed in the revised DIA and will require implementation in the WMP.

Regarding the build-up of sediment in the stormwater pits despite the installation of geofabric.

This is to be addressed in the revision of the SSA prepared by LP consulting and incorporated in the WMP.

Section 5 of the DIA refers to the reference 'DEC (2013)'- but the full bibliography for this reference has not been provided.

It is noted that the reference is 'DEC (2007)'and the bibliography has now been provided in the revised DIA.

Rainfall data was taken from the nearest Bureau of Meteorology monitoring location, being Bankstown. Why was rainfall data from the onsite meteorological station not used?

The DIA has been updated to include rainfall data from the onsite meteorological station.

Table 7.2 identifies two instances where water observed in the stormwater pits is 'clear' with a 'low turbidity'. These observations appear inconsistent with all other observations. Can you provide any explanation for these anomalies?

Section 7.1 of the DIA has been updated to address this question.

One sample identified an exceedance of TRH C_{10}-C_{36} in the surface water. Although this may be unusual – it clearly can occur. An assessment of the impacts of the elevated levels of TRH C_{10}-C_{36} must be undertaken; and mitigation measures must be implemented to address this.

There is currently limited guidance regarding threshold concentrations for TRH in water protective of aquatic ecosystems. Therefore, a quantitative assessment of the potential environmental impacts of elevated levels of TRH C_{10}-C_{36} in surface water discharge is beyond the scope of the DIA. Notwithstanding, mitigation measures are required to be advised in the SSA and implemented in the WMP. As a precautionary approach, the laboratory limit of reporting are recommended as the screening criteria in the monitoring program detailed in the revised DIA. Note, the laboratory LOR is a higher level of protection than the screening criteria presented in EPA (1994) as derived on the basis of the approximate concentration that TRH forms a visible sheen in water. If this criteria is exceeded, this would prompt a review of operational matters and corrective actions.

Section 8 of the DIA states: "Discharges from the site have been found to potentially migrate / discharge to the tributary of Orphan School Creek". You must definitively identify all receiving waters.

Comment noted and Section 8 updated.

You must assess the impact of high levels of heavy metals in surface water.

The assessment of heavy metals in surface water has been updated with an approach consistent with guidance provided in ANZECC (2000). Specifically, the assessment was undertaken in accordance with the decision tree presented in Figure 3.4.2 of ANZECC (2000). In summary, the updated DIA has applied corrected guideline values for hardness (refer to Table 3.4.4 in ANZECC 2000 for factors) as this parameter directly affects the toxicity of these constituents and hence potentially alters the site-specific trigger values. ANZECC (2000) further advises that "the major toxic effect of metals comes from the dissolved fraction, so it is valid to filter samples and compare the

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filtered concentration against the trigger value". On this basis, the DIA has considered only the dissolved (filtered) metal concentration against the new (hardness corrected) guideline values.

Under the revised approach, the maximum reported concentration of zinc, chromium and copper were found to exceed the trigger values by a factor of 1.7, 1.2 and 3.4 respectively.

Regarding the application of a dilution factor for surface water discharges.

The DIA adopted the approach advised in CSIRO (2009) to derive screening criteria that are protective of aquatic ecosystems. The EPA responded that the 'methodology relates to soil and is not applicable in this case'. JBS&G note that the approach was primarily intended for application in the derivation of ecological investigation levels within soils. However, inherent within this methodology is the concentration of constituents within leachate water and their potential impact on receiving water bodies and therefore has some application in this case.

In order to accurately measure the dilution occurring within surface water discharge from the site to the nearest surface water receptor (Orphan School Creek) it would require detailed hydrological assessments within the whole catchment. JBS&G adopted a simplified approach, consistent with CSIRO (2009) in which the area of the site was compared to the area of the catchment discharging to Orphan School Creek to determine an approximate dilution factor. To this extent, an approximate dilution factor of 100 was estimated. It is noted that the revised maximum exceedance in surface water was reported to be 3.4 times the screening values (copper in pit 7), which is significantly less than the dilution factor estimated. On this basis, it is considered that the levels of contaminants are posing a low risk (in terms of toxicity) to the receiving environment.

Notwithstanding, the limitations of the adopted approach have been acknowledged. To this extent, a conservative approach was recommended in the surface water monitoring program, whereby generic ANZECC screening criteria (with hardness correction factors applied to account for toxicity) have been recommended as future targets for the pollution reduction program.

You must implement mitigation measures to reduce high levels of heavy metals

This is to be addressed in the revision of the SSA prepared by LP consulting and incorporated in the WMP. Following the revision of the DIA, JBS&G considers the greatest risk to the environment to be from elevated sediments in stormwater discharge.

Sampling of surface water was undertaken on 14 and 16 February 2017. No rainfall occurred on those days or the preceding 4 to 6 days. Please provide clarification about what has being sampled. We understand there is no stormwater captured on the Premises. Without rain we would not expect any water to be contained within the stormwater pits.

The EPA requested that sufficient sampling be conducted to capture the full variability of water quality discharged from the premises. As noted in the DIA, any variability in surface water quality discharge was inferred to be dictated primarily by rainfall events as little variability in site operations were observed or reported during the time of the investigation. As such, the sampling was conducted during both dry and wet conditions. During dry conditions, surface water was observed to pond in each pit.

No measure of sediment (e.g. Total Suspended Solids) in the water appears to have been tested for. Given that sediment is the main pollutant discharged from the Premises it must be measured and assessed.

Comment noted. JBS&G subsequently sampled and analysed surface water for TSS over two rounds. Section 7 of the DIA has been updated noting that the levels of sediments in surface water discharge require management.

You must demonstrate that site operations are not contributing to groundwater pollution.

Section 6 has been updated.

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Should you have any queries or require further clarification, please feel free to contact the undersigned on 02 8245 0300 or by email cbielby@jbsg.com.au.

Yours sincerely:



Chris Bielby
Environmental Consultant
JBS&G

Reviewed/Approved by:



Seth Molinari
Principal Consultant
JBS&G

Attachments:
1) Limitations
2) Discharge Impact Assessment

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Attachment 1 – Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Attachment 2 – Discharge Impact Assessment

Builders Recycling Operations
Discharge Impact Assessment

191 Miller Street
Chester Hill NSW

5 May 2017

52401-107609/ Rev 1

JBS&G Australia Pty Ltd

www.jbsg.com.au

Builders Recycling Operations
Discharge Impact Assesment

191 Miller Street
Chester Hill NSW

5 May 20177

52401-107609/ Rev 11
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Table of Contents

Abbreviations v

Executive Summary vi

1. Introduction 1
   - 1.1 Introduction and Background 1
2. Site Condition and Surrounding Environment 3
   - 2.1 Site Identification 3
   - 2.2 Current Site Condition 3
   - 2.3 Surrounding Land Uses 3
   - 2.4 Topography and Drainage 4
   - 2.5 Geology 5
   - 2.6 Hydrogeology 5
   - 2.7 Meteorology 5
3. Potential for Contamination 6
4. Sampling Design 7
   - 4.1 Groundwater Investigation 7
   - 4.2 Surface Water Sampling 8
   - 4.3 Decontamination 8
   - 4.4 Laboratory Analysis 8
   - 4.5 Quality Assurance/Quality Control 9
5. Water Quality Assessment Guidelines 10
6. Groundwater Investigation 13
   - 6.1 Soil Observations 13
   - 6.2 Groundwater Levels 13
   - 6.3 Groundwater Field Observations 13
   - 6.4 Analytical Results 13
7. Surface Water Investigation 15
   - 7.1 Surface Water Field Observations 15
   - 7.2 Analytical Results 16
8. Discharge Assessment 18
9. Conclusions and Recommendations 20
10. Limitations 22

List of Figures

Figure 1 Site Location

Figure 2 Site Layout
Figure 3 Sampling Locations
Figure 4 Groundwater Elevation
Figure 5 Villawood Drain Catchment

Appendices

Appendix A Summary Tables
Appendix B Borelogs
Appendix C Laboratory Reports and Chain of Custody Documentation
Appendix D QA/QC
Appendix E Field Sheets
Appendix F Surface Water Monitoring Program

Abbreviations

Term	Definition
AHD	Australian Height Datum
As	Arsenic
BaP	Benzo (a) Pyrene
bgl	Below Ground Level
BTEX	Benzene, Toluene, Ethylbenzene, Xylenes
Cd	Cadmium
CLM	Contaminated Land Management
COPC	Contaminant of Potential Concern
Cr	Chromium
Cu	Copper
DAF	Dilution Attenuation Factor
DP	Deposited Plan
DPI Water	NSW Department of Primary Industry – Water
EPA	NSW Environment Protection Authority
ESL	Ecological Screening Level
Ha	Hectare
Hg	Mercury
JBS&G	JBS&G Australia Pty Ltd
LGA	Local Government Area
LNAPL	Light Non-Aqueous Phase Liquid
LOR	Limit of Reporting
NEPC	National Environment Protection Council
Ni	Nickel
NLA	Net Leasable Area
OEH	NSW office of Environment and Heritage
PAH	Polycyclic Aromatic Hydrocarbons
Pb	Lead
PCB	Polychlorinated Biphenyls
PCE	Tetrachloroethene
RL	Relative Level
TCE	Trichloroethlene
TPH	Total Petroleum Hydrocarbons
TRH	Total Recoverable Hydrocarbons
VOC	Volatile Organic Compound
Zn	Zinc

Executive Summary

JBS&G Australia Pty Ltd (JBS&G) was engaged by Builders Recycling Operations Pty Ltd (the client), to undertake an assessment of potential impacts of groundwater and stormwater discharge from the property located at 191 Miller Street, Chester Hill, NSW (the site).

Based on the scope of works completed for this assessment and subject to the limitations presented in **Section 10**, the following conclusions are made:

- A program of surface water and groundwater sampling was undertaken by JBS&G in accordance with the Notice of Licence Variation (EPA 2016) for the waste management facility as located at 191 Miller Rd, Chester Hill, NSW.
- An assessment of quality assurance / quality control has been undertaken with regards to the generation of environmental data for the assessment. Environmental data has been found to be sufficiently reliable for the objectives of the assessment.
- Groundwater monitoring wells were installed at nine locations across the general extent of waste operations at the site. Based on the surveyed groundwater levels, the inferred direction of groundwater is to the south-west, as consistent with the surrounding topography. The sampled groundwater from each monitoring well location was analysed for a range of COPCs as identified in **Section 3**. Concentrations of COPCs were generally below the adopted screening criteria protective of fresh water ecosystems with the exception of a range of heavy metals and trichloroethlene (TCE). Heavy metals were reported at the highest concentrations within MW02 and MW03, which is located hydraulically up-gradient of the waste handling operation. The reported concentration of heavy metals within the extent and downgradient boundary (including MW08) of the waste handling operation were considered to be representative of urban geological conditions. There were no records or evidence (available to JBS&G during the investigation) of chlorinated solvents use or storage on site. In addition, the highest TCE concentration was reported in a location not used for the processing or storage of waste materials that could potentially impact groundwater. On a weight of evidence approach, it is considered unlikely that the current site activities are causing heavy metal and TCE impact to groundwater.
- Site surface water was sampled at two discharge points and one up-gradient location (relative to waste handling operations) over multiple rounds to assess the variability in surface water discharge from the site. The samples were analysed for a range of COPCs as identified in **Section 3**. Concentrations of COPCs were generally below the adopted screening criteria protective of fresh water ecosystems with the principal exception of TSS and heavy metals. The reported levels of TSS require management. The heavy metals zinc, chromium and copper were reported to exceed the screening criteria in Pit 7 on 8 February 2017 by a factor of 1.7, 1.2 and 3.4 respectively. In addition, a visible sheen was present within pit 15 on 14 February and 1 March 2017. On 14 February, the sheen appeared to be associated with a small oil stain on the ground surface in vicinity of the pit and where trucks enter and vacate the site.
- An assessment of impacts at a catchment level has been undertaken as based on the approach advised in CSIRO (2009). As reported in Civic (2008), the size of the Villawood Drain Catchment is estimated as 737 ha. The total area of the site, where potential impacts may discharge from surface water or groundwater is 6.5 ha (noting that the area of waste processing facility is approximately 3.7 ha). Comparison of this area to the smallest of the estimated catchment sizes generates a dilution attenuation factor (DAF) estimate of 100. Consideration of this DAF with the levels of contaminants found in site surface water and

groundwater, indicates the estimated concentration attributable to the site where it enters the tributary of Orphan School Creek to be below the adopted trigger values.

- Notwithstanding, it is recommended that appropriate management procedures are adopted to minimise the level of contaminants in site surface water discharge. This would largely comprise the management/removal of gross pollutants associated with sediments and constituents in the un-dissolved phase in surface water. Procedures to minimise pollutant loads in site stormwater discharge have been described in the Site Stormwater Audit Report (LP 2016).
- An ongoing surface water monitoring program is recommended in order to measure the success of any pollution mitigation measures to be implemented at the site. Details of a recommended monitoring program have been provided in **Appendix F**.

1. Introduction

1.1 Introduction and Background

JBS&G Australia Pty Ltd (JBS&G) was engaged by Builders Recycling Operations Pty Ltd (the client), to undertake an assessment of potential impacts of stormwater and groundwater discharge from the property located at 191 Miller Street, Chester Hill, NSW (the site). The site is currently used as a waste management facility and from the period between 1957 to 2001, the site was utilised for the commercial production of fertilizers and explosives (Ideal 2014[1]).

The site is currently subject to an environmental protection licence (EPL) 20421 in which a recent Notice of Licence Variation (EPA 2016[2]) was issued. Following communications with the NSW EPA, the client has committed to submit a Water Management Plan to the NSW Environment Protection Authority (EPA) assessing the potential environmental impacts of water discharges from the site and where required, identify options for mitigating or eliminating any identified environmental impacts.

A Site Stormwater Audit Report (LP 2016 [3]) was prepared for the site that included recommendations on stormwater system improvements in order to reduce pollutant loads discharged from the site. The recommendations comprised:

- Repair of all damaged stormwater pits;
- Jet blasting clean all stormwater lines and temporary containment of debris and silt;
- Protection of all pits from heavy vehicle traffic;
- Retrofitting 'Ecosol'or similar litter baskets to all pits;
- Regular washing of roads and driveways;
- Removal of a stormwater pit (Pit 17);
- Installation of a new Ecosol GPT 470 device or similar device at the outlet of the existing stormwater system;
- Installation of a new primary and secondary filtration system at the end of the stormwater system prior to exit of the site; and
- Establishment of an approved monitoring plan and quality programme to record all ongoing monitoring and maintenance and testing of the effectiveness of the treatment train.

This report addresses the following key elements:

- Characterisation of discharge stormwater quality including identification of key pollutants and typical concentration levels;
- Characterisation of groundwater quality including identification of key pollutants and typical concentration levels;
- Characterisation and identification of the receiving environment for discharges;
- Assessment of potential impacts on surface waters (quality); and

[1] *Report on Preliminary Contamination*, 191 Miller Road, Chester Hill, NSW, prepared by Ideal Civiltest for Wasteop, 14/11/2014 (Ideal 2014)

[2] *Notice of Variation Licence No. 20421*, Notice Number 1546195, 191 Miller Road Chester Hill, NSW, prepared by NSW EPA, file number EF14/22270 (EPA 2016).

[3] *Site Stormwater Audit Report for WasteOp*, 191 Miller Road, Chester Hill, NSW, prepared by LP Consulting Australia Pty Ltd, 19/10/2016 (LP 2016)

- Details of feasible and reasonable measures to mitigate or eliminate any environmental impacts where necessary.

2. Site Condition and Surrounding Environment

2.1 Site Identification

The location of the site is shown in **Figure 1**, current layout is shown in **Figure 2**. Site details are summarised in **Table 2.1**.

Table 2.1: Summary Site Details

Project Site Lot/DP	Lot 8 in DP 1039882
Address	191 Miller Street, Chester Hill NSW 2162
Local Government Authority	The City of Canterbury Bankstown
Current Use	Industrial
Geographical Co-ordinates	314558.1 E, 6248866.3 N (GDA94 – MGA56)
Area of the site	Approximately 6.5 hectares Waste handling operation area is approximately 3.7 ha.

2.2 Current Site Condition

A walkover inspection of the site was undertaken on 1 February 2017 by two senior JBS&G employees (scientist and engineer). General observations from this inspection are provided below:

- The site was situated in an area predominantly used for industrial purposes.
- Access to the site is via Miller Road.
- The site topography slopes to the south-west.
- The operation of the waste management facility is predominantly south of a roadway, which contains a weighbridge and intersects the central portion of the site.
- At the time of the inspection, all surface water pits as shown on **Figure 2** contained sediment build-up.
- The waste processing and storage area of the site is predominantly situated on an un-sealed ground surface where it is anticipated that the majority of surface water generated during rainfall events will infiltrate the sub-surface.
- The general waste processing activities comprised, segregation, size separation of materials and crushing of building and demolition wastes delivered to the site. Based on the inspection and communications with the site operator, there were no identified site operational processes that may affect the variability in surface water quality generated from the site.

2.3 Surrounding Land Uses

The surrounding land uses have been identified as comprising:

- North – bound by a train line with predominantly residential and industrial properties beyond;
- East – bound by commercial and industrial properties to the east with residential properties beyond;
- South – industrial estate comprising warehouse units (Industrial zoning). The industrial properties include the formerly Orica owned industrial premises located at 127 Orchard Road, Chester Hill. The EPA previously declared the land to be a remediation site under the Contaminated Land Management Act 1997. It was noted that contaminants in soil and groundwater at the site included a range volatile chlorinated hydrocarbons (“VCH”) - most significantly vinyl chloride, Cis 1,2 dichloroethene (cis 1,2 DCE), 1,2 dichloroethane (1,2 DCA), trichloroethene (TCE), chloroform and carbon tetrachloride. The contamination was

reported to be migrating off-site via groundwater flow and is therefore considered a potential off-site source of contamination at the site; and

- West – bound by Miller Road and industrial properties beyond.

2.4 Topography and Drainage

A review of the regional topographic data (SIX Maps[4]) indicated that the site lies at approximately 20m Australian Height Datum (AHD) and slopes to the south-west which was confirmed during the site inspection.

From a review of a site stormwater layout plan presented in Site Stormwater Report (LP 2016), there are two surface water discharge points in which surface water exits the site. These are identified as pits 15 and 17 and are present on the downgradient western boundary of the site (see **Figure 2**). Site stormwater discharges through these pits to the local stormwater drainage network and subsequently discharges to a tributary of Orphan School Creek located approximately 1.6 km downgradient of the site.

City of Canterbury Bankstown Council identifies the site as situated within the Villawood Drain catchment which includes most of the suburbs of Villawood and Bass Hill, and includes parts of Chester Hill, Georges Hall and Lansdowne. The catchment is approximately 7.4 km^2 (737 ha), originating wholly within the Local Government Area (Civic 2008[5]). It drains mainly from south to northwest, the lowest point being near the junction of Woodville Road and Christina Road Villawood. Stormwater from the catchment then flows into Fairfield via a box culvert and open channel network, with outflows eventually entering Georges River. The diagram below shows an aerial photo with some of the catchment's major features.



[4] SIX Maps website, https://maps.six.nsw.gov.au/ accessed 24 March 2017.
[5] *Bankstown City Council Villawood Drain Works-As-Executed Study*, Civic Design, July 2008.

2.5 Geology

Review of the Sydney 1:100 000 geological map, sheet series 9035 indicated the site is located on Middle Triassic Period Bringelly Shale which consists of shale, carbonaceous claystone, laminate, fine to medium grained lithic sandstone, rare coal. Soils comprise of shallow to moderately deep (>100 cm) hardsetting mottled texture contrast soils, red and brown podzolic soils on crests grading to yellow podzolic soils on lower slopes and in drainage lines.

2.6 Hydrogeology

A review of the registered bore information obtained from the NSW Office of Water (OW, 2017[6]) indicated that there were four registered bores located within a 1 km radius of the site. The bores are located approximately 300 m to the north-west of the site on Christina Road and were installed for monitoring purposes. No details on the encountered geology or water bearing zones were provided in the records. Therefore, with limited information on nearby groundwater bores, it is inferred that shallow groundwater on-site will flow in a south-westerly direction based on regional topography.

2.7 Meteorology

A review of average climatic data for the nearest Bureau of Meteorology monitoring location (Bankstown Airport) indicates the site is located within the following meteorological setting:

- Average minimum temperatures vary from 5.2 in July to 18.2 in January;
- Average maximum temperatures vary from 17.3 in July to 28.3 in January;
- The average annual rainfall is approximately 876.6 mm with rainfall greater than 1 mm occurring on an average of 82.1 days per year; and
- Monthly rainfall varies from 43.7 mm in September to 103.1 mm in February with the wettest periods occurring on average between January and April.

[6] NSW Govt. Office of Water, http://allwaterdata.water.nsw.gov.au/water.stm , accessed 24 March 2017 (OW 2017)

3. Potential for Contamination

From a review of Ideal (2014), the site was used for industrial purposes from 1951 and was previously vacant. The industrial land use comprised the commercial production and manufacturing of commercial explosives and fertilizers. The identified contaminants of potential concern (COPCs) were primarily heavy metals, Phthalates, volatile organic compounds (VOCs) and compounds specific to explosives and fertilizer production such as nitrates, ammonia and organochlorine pesticides (OCPs) (Ideal 2014). Through the site's former use, there is the potential that these COPCs have impacted groundwater at the site.

Subsequent to the manufacturing of explosives and fertilizers, the site has been used as a waste management facility. This primarily involves the storage and processing of soil, building and demolition wastes. Given that the facility stores and processes soil from a variety of sources, there is the potential that the soils have been impacted with a range of COPCs including heavy metals, total recoverable hydrocarbons (TRH), benzene, toluene, ethylbenzene, xylene (BTEX), polycyclic aromatic hydrocarbons (PAHs), VOCs and semi-volatile organic compounds (SVOCs). Consequently, there is the potential that runoff from site soils can impact site surface water and groundwater with a range of COPCs.

4. Sampling Design

4.1 Groundwater Investigation

Groundwater Monitoring Well Installation

Nine groundwater monitoring wells were installed as part of this investigation (see **Figure 3**). The wells (MW1-MW9) were installed at locations distributed across the extent of waste handling operations at the site.

Wells were installed by a drill rig using solid flight augers. Boreholes were advanced to approximately 2 m below groundwater as encountered during drilling (total depth of 7-8.5 m below ground surface).

Monitoring wells were constructed using Class 18 uPVC (50mm) screen and casing, with appropriate gravel packs, bentonite seals, well caps and lockable road boxes.

Wells were developed after construction using a stainless steel bailer to remove turbidity created by the drilling and construction process. Following development the monitoring wells were allowed to stabilise for six days before sampling.

Groundwater Sampling

All monitoring well locations were sampled using a peristaltic pump. In order to ensure groundwater representative of the formation was obtained, the following procedure was adopted:

- Prior to sampling groundwater an interface probe was used to assess the presence of NAPL and the approximate depth to standing groundwater levels (SWLs) in each well;
- Wells were purged by pumping water from the well using a peristaltic pump with new disposable tubing at each sampling location. The use of a peristaltic pump for sampling was considered appropriate given the shallow depth to water, only a short length of silicone tubing was used in the pump head, the remainder of the tubing was of small diameter and relatively inert material and no degassing was observed during field pumping;
- Purged water was pumped through a flow cell containing electrodes measuring pH, conductivity, dissolved oxygen, redox potential and temperature. Samples were collected once field parameters had stabilised within the criteria provided on field record Groundwater Sampling Forms (see **Appendix E)**;
- During the development, purging and sampling, features such as discolouration, odours and other indications of contamination were noted on field sheets;
- Collection of a groundwater sample was completed by direct filling of new laboratory supplied and preserved (where required) bottles. Samples for metals analysis were field filtered. Each groundwater sample bottle was filled with no headspace and sealed with a laboratory supplied screw closure;
- Each of the sample bottles was labelled with the project ID, date, sampler's initials and unique monitoring well ID (or QC sample name) using permanent ink marker on labels affixed to the sides of the bottles by the laboratory;
- The sample containers were placed directly into a pre-chilled ice chest, for transport to the testing laboratories under chain of custody conditions; and
- Chain of custody documentation was completed for each batch of samples relinquished to the laboratory and included: sample ID; number of bottles/vials; media type (i.e. water); project ID; name; and date of sampling and relinquishment. Groundwater duplicate and triplicate samples were obtained during the field sampling event.

Survey of New Wells

All new monitoring wells were surveyed by a Registered Surveyor to measure relative heights of top of casing between monitoring well locations to allow interpretation of groundwater flow directions at the site. The relative heights of the top of casing (TOC) of the wells were calculated in m AHD.

4.2 Surface Water Sampling

From a review of the site stormwater layout plan presented in Site Stormwater Report (LP 2016), there are two surface water discharge points in which surface water exits the site. These are identified as pits 15 and 17 and are shown on **Figure 2**. These pits collect all surface water draining into the site stormwater infrastructure and include overland flow from the waste handling operations of the site. An inferred up-gradient (to the north of the waste processing operations) pit was identified as pit 7. Surface water was collected from each pit (7, 15 and 17) in order to characterise the surface water entering (to the north of waste handling area) and discharging from the site. The surface water was collected from each location by directly filling new laboratory supplied and preserved (where required) bottles. The pits were sampled over five events in order to assess the variability of surface water quality discharged from the site. At the request of the EPA, samples were also collected from the pits on 24 and 27 April 2017 for analysis of TSS. Any variability in surface water quality discharge was inferred to be dictated primarily by rainfall events as little variability in site operations were observed or reported during the time of the investigation.

4.3 Decontamination

Decontamination of surface water and groundwater sampling equipment was undertaken between sample locations to ensure cross-contamination did not occur.

4.4 Laboratory Analysis

Eurofins (primary laboratory) and Envirolab Services Pty Ltd (Envirolab) (secondary laboratory) were the laboratories contracted for chemical analysis of samples. Both laboratories are NATA registered for the requested analysis. Both laboratories undertook internal Quality Assurance (QA) procedures in accordance with their NATA registration. In addition, the laboratories were required to meet JBS&G's internal Quality Assurance / Quality Control (QA/QC) requirements. Laboratory analytical reports are included in **Appendix C**. The analytical schedule is presented in **Table 4.1.**

Table 4.1: Analytical Schedule

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
Surface Water	3 locations	Heavy Metals (filtered) – 16 samples Heavy Metals (un-filtered) – 6 samples PAH – 16 samples TRH/BTEX – 16 samples VOCs – 16 samples SVOCs – 16 samples OCPs – 16 samples Phthalates – 16 samples Phenols – 16 samples EC - 16 samples pH – 16 samples TSS – 6 samples (collected on 24 and 27 April 2017)
Groundwater	9 monitoring wells	Heavy Metals – 9 samples PAH – 9 samples TRH/BTEX – 9 samples VOCs – 9 samples

Sample Type	No. of Sampling Locations	Analyses (exc. QA/QC)
		OCPs – 9 samples OPPs (organophosphorous pesticides) – 9 samples

4.5 Quality Assurance/Quality Control

The Quality Assurance program for the site comprised the following elements:

- Field Duplicate Samples: one field duplicate sample was collected for every 20 primary samples collected (or part thereof). Duplicate samples are sent to the primary analytical laboratory to check the accuracy of the analytical results.
- Field Triplicate Samples: one field triplicate sample was collected for every 20 primary samples collected (or part thereof). Triplicate samples are sent to the secondary analytical laboratory to check the accuracy of the analytical results.
- Trip Spike: one trip spike was transported with the samples to the laboratory. Trip Spikes are clean water samples spiked with known concentrations of volatile compounds, typically BTEX compounds, by the primary analytical laboratory. Trip spike samples are stored and transported under the same conditions as the collected samples. Trip spike samples are analysed by the primary laboratory and a comparison of analysed to known spiked concentrations is used to assess for potential volatile losses during sample transport to the laboratory.
- Trip Blank: one trip blank sample was transported with the samples to the laboratory. Trip blanks are clean water samples transported under the same conditions as the collected samples. Trip blank samples are analysed to assess for potential volatile cross contamination of samples during transport to the laboratory.

The results of the laboratories QA/QC analysis were checked by JBS&G against the criteria provided in **Table 4.2**. Data quality indicators used to assess field duplicate and triplicate samples are also included in **Table 4.2**.

Table 4.2: Data Quality Indicators

Data Quality Indicator	Frequency	Data Quality Criteria
Precision		
Blind duplicates (intra-laboratory)	1 / 20 samples	<50% RPD[1]
Blind duplicates (inter-laboratory)	1 / 20 samples	<50% RPD[1]
Laboratory duplicates	1 / 20 samples	<50% RPD[1]
Accuracy		
Surrogate spikes	All organic samples	70-130% recovery
Laboratory control samples	1 per lab batch	70-130% recovery
Matrix spikes	1 per lab batch	70-130% recovery
Representativeness		
Laboratory blanks	1 per lab batch	<LOR
Trip Spike	1 per lab batch	70-130% recovery
Trip blank	1 per lab batch	<LOR
Sampling appropriate for media and analytes	All samples	-
Samples extracted and analysed within holding times.	-	Heavy metals (28 days) BTEX, VOCs (14 days) TRH, PAH, phenols (7 days)

1. If the RPD between duplicates is greater than the pre-determined data quality indicator, a judgement is made as to whether the excess is critical in relation to the validation of the data set or unacceptable sampling error is occurring in the field.

5. Water Quality Assessment Guidelines

Water quality assessment guideline values adopted for this assessment are based on a consideration of surface water and groundwater's environmental values. Environmental values are defined in ANZECC / ARMCANZ (2000) as "...particular values or uses of the environment that are important for a healthy ecosystem or for public benefit, welfare, safety or health which require protection from the effects of pollution, waste discharges and deposit".

NEPC (2013) presents six environmental values which are required to be considered in the assessment of contaminated water including:

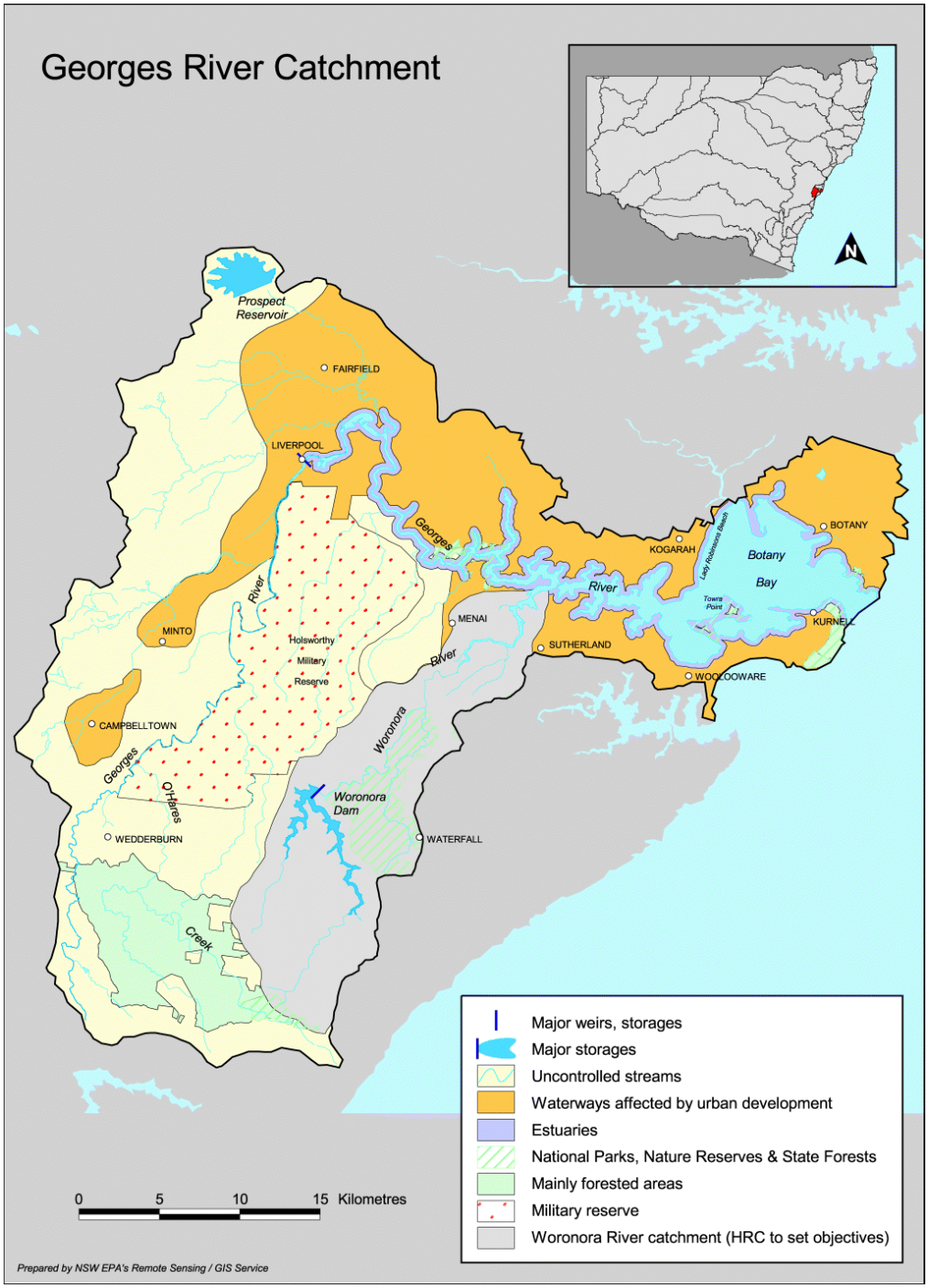
- Aquatic ecosystems;
- Aquaculture and human consumers of food;
- Agricultural water;
- Recreation and aesthetics;
- Drinking water; and
- Industrial water

Current and projected contaminant concentrations in water are required to be compared to the guideline values at the points of existing and realistic future use for each relevant environmental value.

DEC (2007[7]) instructs that all environmental values of groundwater be identified to allow development of appropriate water investigation levels. NSW Government (2006) 'Environmental Objectives for Water Quality and River Flow' are nominated as an appropriate source of environmental values. DEC (2007) further recommends that groundwater with a level of total dissolved solids below 2000 mg/L be considered suitable for potential use as drinking water. However, from a review of registered groundwater bores (see **Section 2.6)**, there is no production or domestic bores within a 1 km radius of the site. On this basis, it is considered highly unlikely that groundwater in the vicinity of the site would be used as drinking water. As a result, drinking water criteria are not considered relevant to assessment of groundwater conditions at the site.

The site is located within the Georges River catchment as shown in the following diagram.

[7] *Guidelines for the Assessment and Management of Groundwater Contamination*, Department of Environment and Conservation NSW (DEC 2007)



On this basis, surface water and groundwater investigation criteria are adopted with reference to EPA's endorsed environmental values for the Georges River catchment as affected by urban development. The relevant environmental values/objectives relevant for discharge of surface water and groundwater to Orphan School Creek (and Georges River) are aquatic ecosystems (fresh), visual amenity and secondary/primary recreational contact. As such, application of the adopted surface water and groundwater criteria shall be as follows:

- Recreational Criteria – shall be applied to surface water and groundwater as human contact with discharge water may occur via mixing with the surface waters of the Orphan School Creek prior to the Georges River.
- Fresh Water Aquatic Criteria – shall similarly be applied to surface water and groundwater as a result of potential exposures down-gradient of the site. It is noted that trigger values for

heavy metals are corrected for hardness (mg/L $CaCO_3$) as advised by Table 3.4.4 in ANZECC (2000), as this parameter directly affects the toxicity of these constituents and hence potentially alters the site-specific trigger values.

In addition, the concentration of constituents in site surface water will be compared to the recommended 'typical values' reported in the NSW EPA commissioned technical report 'Stormwater flow and quality, and the effectiveness of non-proprietary stormwater treatment measures – a review and gap analysis' (Fletcher 2004[8]) for industrial land use.

There is currently limited guidance regarding threshold concentrations for TRH in water. ANZEC/ARMCANZ (2000) instructs that oil and petrochemicals should not be noticeable as a visible film on the water nor should they be detectable by odour. Guidelines for Assessing Service Station Sites (EPA 1994[9]) note that this criterion is equivalent to an oil and grease concentration of approximately 10mg/L and has been used for screening purposes in this assessment. Fletcher (2004) also lists a typical oil and grease concentration of 9.5 mg/L for industrial land use and 17 mg/L for roads.

In regards to level of sediments in surface water discharge, reference is made to a criterion of 50 mg/L of Total Suspended Solids (TSS) as identified in The Blue Book (Managing Urban Stormwater – Soils and Construction, Landcom, 2004).

[8] *Stormwater flow and quality, and the effectiveness of non-proprietary stormwater treatment measures – a review and gap analysis*, technical report 04/8, T. Fletcher, Hugh Duncan, Peter Poelsma, Sara Lloyd, Cooperative Research Centre for Catchment Hydrology, December 2004 (Fletcher 2004).

[9] *Guidelines for Assessing Service Station Sites,* NSW Environmental Protection Agency 1994 (EPA 1994).

6. Groundwater Investigation

6.1 Soil Observations

Groundwater monitoring and sampling was conducted on 9 monitoring wells installed as part of this investigation. Observations made during site drilling are detailed in borelogs provided in **Appendix B**. In summary, fill was encountered at each location ranging from 0.5-4.5 m in depth. The fill generally comprised stiff silty clay of moderate plasticity with minimal inclusions. The fill was underlain by natural silty clay and shale. The primary water bearing zone as observed during drilling was within the natural silty clay or shale at a depth ranging from 5-8.5 m bgs. There were no odours or staining observed in soils during the investigation.

6.2 Groundwater Levels

Tabulated values for measured depths to groundwater during the February 2017 groundwater monitoring event (GME), and corresponding relative groundwater levels (m AHD) are presented in **Table A**. The depths to water in the monitoring wells ranged from 0.42 m bTOC (MW02) and 2.20 m bTOC (MW08). The measured depths to water were significantly less than the depths of the inferred water bearing zones as observed during drilling - potentially indicating that the groundwater underlying the site is semi-confined/confined.

Standing Water Levels (SWL) determined for the site ranged between 18.29 m AHD (MW08) and 23.38 m AHD (MW03). Groundwater contours inferred from the groundwater level data obtained during the February 2017 sampling are shown on **Figure 4**. Based on the overall SWL contours, the inferred direction of groundwater is to the south-west, consistent with the surrounding topography.

6.3 Groundwater Field Observations

Field observations for the February 2017 monitoring event (**Table A**, **Appendix A**) indicated that the purged groundwater ranged from clear to turbid, in which no odours were observed at any of the monitoring well locations. A slight sheen was observed in purged water from monitoring wells MW01, MW03, MW04, MW05, MW07 MW08 and MW09 which was noted to resemble a fine silt film.

For the February 2017 GME, field parameters of dissolved oxygen (DO), electrical conductivity (EC), pH, reduction-oxidation potential (redox) and temperature were recorded at all monitoring wells. Field parameters are summarised as following:

- DO values range from 0.10 to 1.57 mg/L;
- EC values range from 12,135 to 19,940 µS/cm;
- pH range from 7.11 to 7.44;
- Uncorrected redox potential range from -80 to 70 mV; and
- Temperature range from 21.3 to 26.1°C.

Overall the dissolved oxygen values in the February 2017 GME are suggestive of low oxygen saturation in the groundwater sampled. Low dissolved oxygen values suggest reducing subsurface conditions may be prevalent through the study area. The pH values were close to neutral, while the EC values suggest the groundwater is saline.

6.4 Analytical Results

The groundwater analytical results are summarised in **Table D** provided in **Appendix A**. Detailed laboratory reports are provided in **Appendix C**. An assessment of quality assurance / quality control has been undertaken with the generation of environmental data for the assessment as provided in

Appendix D. Environmental data has been found to be sufficiently reliable for the objectives of the assessment.

Groundwater sampling locations are shown on **Figure 3**.

Concentrations of TRH, BTEX, PAHs, chlorinated alkanes, OCPs, OPPs and chlorinated benzenes were reported by the laboratory as predominately below the laboratory reporting limit (LOR), or below the adopted assessment screening criteria.

Concentrations of analytes that were found to exceed the assessment guideline values established in **Section 5** are summarised in **Table 6.1** below.

Table 6.1: Range of COPC concentrations in groundwater (mg/L)

Analyte	Screening Criteria (ANZECC 2000)	Min. Concentration (mg/L)	Max. Concentration (mg/L)	Mean Concentration	Location of Max. Concentration
Cadmium	0.0002	<0.0002	0.0004	0.0002	MW03
Chromium	0.001	<0.001	0.073	0.014	MW03
Copper	0.0014	<0.001	0.17	0.027	MW03
Lead	0.0034	<0.001	0.072	0.013	MW03
Nickel	0.011	0.001	0.093	0.016	MW03
Zinc	0.008	0.009	0.34	0.063	MW03
Ammonia	0.9	0.02	0.93	0.33	MW03
Trichloroethene	0.33	<0.001	0.76	0.095	MW08

The highest concentrations of heavy metals were reported in the monitoring wells MW02 and MW03, which are located hydraulically up-gradient from the waste handling operation. The concentrations of heavy metals within the extent and downgradient boundary (including MW08) of the waste handling operation are considered to be representative of urban geological conditions. Therefore, it is considered unlikely that current site operations are contributing to heavy metal impacts in groundwater.

Trichloroethene (TCE) was detected above the assessment guideline values established in **Section 5** in MW08. This monitoring well is located on the down-gradient boundary of the site and is within an area used as a roadway. There were no records or evidence (available to JBS&G during the investigation) of chlorinated solvents use or storage on site. In addition, this portion of the site is not used for the processing or storage of waste materials that could potentially impact groundwater. On a weight of evidence approach, it is considered unlikely that the current site activities have/are causing TCE impact to groundwater at this location of the site. It is noted that MW08 is located hydraulically cross-gradient from the former Orica premises located at 127 Orchard Road in which chlorinated hydrocarbons were reportedly migrating off-site in groundwater.

7. Surface Water Investigation

7.1 Surface Water Field Observations

Surface water samples were collected from pits 7, 15 and 17 on 8th 14th, 16th February 2017 and 1st, 7th and 10th March 2017. It is noted that on 10 March 2017 a sample was only collected from discharge point pit 17 in order to verify a previous laboratory result.

The timing of the sampling coincided with different rainfall events in order to assess any variability in surface water quality discharging from the site. A summary of rainfall data from the onsite monitoring station, or when onsite data is not available, from nearest Bureau of Meteorology monitoring location (Bankstown) during the days of surface water sampling is summarised in **Table 7.1**.

Table 7.1: Rainfall Data Summary

Sample Date	Rainfall (mm) on preceding day of sampling	Rainfall (mm) on sample date
8 February 2017	14.7	12.3
14 February 2017	0	0
16 February 2017	0	0
1 March 2017	3	16.2
7 March 2017	0	2.1
10 March 2017	0.6	0
24 April 2017 (from BOM)	0 (from BOM)	0 (from BOM)
27 April 2017	0.6 (from BOM)	1.0 (from BOM)

As indicated in **Table 7.1**, the sampling coincided with low and high rainfall events.

A summary of site observations of surface water in each pit is summarised in **Table 7.2**. It is noted that the surface water was only observed to be clear with low turbidity on 16 February and 10 March 2017 in pit 17. These sampling events coincided with dry conditions, in which it is most likely that any suspended solids would have settled to produce less turbid surface water.

Table 7.2: Summary of Surface Water Observations

Sample Date	Sample location (pit)	Observation
8 February 2017	7	Brown, turbid, no odour, no sheen. Silt present in drain.
	15	Brown, turbid, no odour, no sheen. Leaf litter present in drain.
	17	Brown, turbid, no odour, no sheen. Silt present in drain.
14 February 2017	7	Brown, turbid, no odour, no sheen. Silt present in drain.
	15	Brown, turbid, no odour, sheen. Leaf litter present in drain.
	17	Brown, turbid, no odour, no sheen. Silt present in drain.
16 February 2017	7	Brown, turbid, no odour, no sheen. Silt present in drain.
	15	Brown, turbid, no odour, no sheen. Leaf litter present in drain.
	17	Clear, low turbidity, no odour, no sheen. Leaf litter present in drain.
1 March 2017	7	Brown, turbid, no odour, no sheen.

Sample Date	Sample location (pit)	Observation
	15	Brown, turbid, no odour, slight sheen.
	17	Brown, turbid, no odour, no sheen.
7 March 2017	7	Brown, turbid, no odour, no sheen, limited water present. Silt present in drain.
	15	Brown, turbid, no odour, no sheen, limited water present. Silt present in drain.
	17	Brown, turbid, no odour, no sheen, limited water present. Silt present in drain.
10 March 2017	17	Clear, low turbidity, no odour, no sheen, limited water present. Silt present in drain.
24 April 2017	7	Brown, turbid, no odour, no sheen.
	15	Brown, turbid, no odour, no sheen.
	17	Brown, turbid, no odour, no sheen.
27 April 2017	7	Brown, turbid, no odour, no sheen.
	15	Brown, turbid, no odour, no sheen.
	17	Brown, turbid, no odour, no sheen.

7.2 Analytical Results

The surface water analytical results are summarised in **Table C** provided in **Appendix A**. Detailed laboratory reports are provided in **Appendix C**. An assessment of quality assurance / quality control has been undertaken with the generation of environmental data for the assessment as provided in **Appendix D**. Environmental data has been found to be sufficiently reliable for the objectives of the assessment.

Sampling locations are shown on **Figure 3**.

Concentrations of TRH, BTEX, PAHs, SVOCs, VOCs, OCPs, phenols, phthalates, ammonia and nitrates were reported by the laboratory as predominately below the laboratory reporting limit (LOR), or below the adopted assessment screening criteria.

The levels of TSS are summarised in **Table 7.3**. The recommended surface water discharge criterion presented in The Blue Book (Landcom 2004) is 50mg/L. The reported levels in pit 7 considerably exceed this criteria and therefore require management.

Sample Date	Sample location (pit)	TSS (mg/L)
24 April 2017	7	24000
	15	54
	17	270
27 April 2017	7	52000
	15	10
	17	8

Concentrations of analytes that were found to exceed the screening guideline values established in **Section 5** are summarised in **Table 7.4** below. It is noted that the trigger values were corrected for hardness (mg/L $CaCO_3$) as advised by Table 3.4.4 in ANZECC (2000) as this parameter has a direct effect on the toxicity of the metals. The average hardness reported in surface water was approximately 100 mg/L (as $CaCO_3$) which equates to a hardness category of 'Moderate'. In

addition, only dissolved metal concentrations were considered as ANZECC (2000) further advises that "the major toxic effect of metals comes from the dissolved fraction, so it is valid to filter samples and compare the filtered concentration against the trigger value".

Table 7.4: Range of COPC Concentrations in Surface Water (mg/L)

Analyte	Screening Criteria (mg/L) (ANZECC 2000) (hardness corrected)	Typical Values Industrial (Fletcher 2004) (mg/L)	Min. Concentration (mg/L)	Max. Concentration (mg/L)	Mean Concentration	Location of Max. Concentration
Zinc (filtered)	0.02		<0.005	0.035	0.0088	7 (8 February 2017)
Chromium (filtered)	0.0025	-	<0.001	0.003	0.00081	7 (8 February 2017)
Copper (filtered)	0.0035	0.08	<0.001	0.012	0.0032	7 (8 February 2017)

The heavy metals zinc, chromium and copper were reported to exceed the screening criteria in Pit 7 on 8 February 2017 by a factor of 1.7, 1.2 and 3.4 respectively.

While the concentration of heavy metals were found to exceed the ANZECC (2000) screening criteria, the concentrations were below the typical value provided in Fletcher (2004) for industrial land use and thus indicating that the reported concentrations are largely within the expected concentration range for typical urban water runoff for industrial land use.

A sheen was noted in the water sample collected from pit 15 on 14 February 2017 and had a reported TRH C_{10}-C_{36} concentration of 13.6 mg/L - exceeding the screening criterion presented in EPA (1994). The sheen was visibly present in a small area on a concrete pavement (< 1 m^2) and appeared to be associated with a small oil stain on the ground surface where trucks enter and vacate the site. All other samples reported total TRH concentrations less than the screening criteria provided for oil and grease in EPA (1994) and Fletcher (2004). It is noted that a slight sheen was observed in pit 15 on 1 March 2017 although the corresponding TRH concentration was less than the laboratory reporting limit.

8. Discharge Assessment

The closest unconcreted ("natural") drainage channel is shown on **Figure 5** and discussed in **Section 2 (Orphan School Creek)** and is located approximately 1.6 km downgradient of the site. Mixing (dilution) of discharge water exiting the site will occur within the concrete lined channel prior to it entering the sensitive receptor of Orphan School Creek.

In order to accurately measure the dilution occurring within surface water discharge from the site to the nearest surface water receptor (Orphan School Creek), it would require detailed hydrological assessments within the whole catchment. JBS&G adopted a simplified approach, consistent with CSIRO (2009[10]) in which the area of the site was compared to the area of the catchment discharging to Orphan School Creek to estimate an approximate dilution factor.

It is noted that the approach outlined in CSIRO (2009) was primarily intended for application in the derivation of ecological investigation levels within soils. However, inherent within this methodology is the concentration of constituents within leachate water and their potential impact on receiving water bodies and therefore is considered a reasonable basis for this assessment.

Under this approach, it is assumed that seepage or releases from the broader areas of the catchment are found to mix with those from the subject site. Consequently, the concentrations of constituents discharging from a particular site will not necessarily be equal to concentrations that may discharge into the nearest potentially sensitive ecological receptor of these waterways. A dilution attenuation factor (DAF) is recommended to be used to account for these processes. The following equation is provided by CSIRO (2009):

- DAF = 100 / percent of contaminated soil in catchment.

Following this approach, the overall catchment size is estimated as 737 ha (Civic 2008) on the basis of the discharge point into the tributary of Orphan School Creek, as shown on **Figure 5.** The total area of the site, where potential impacts may discharge from surface water or groundwater, is 6.5 ha. Comparison of this area to the estimated catchment sizes derives a dilution attenuation factor (DAF) estimate of 100.

Consideration of this DAF with the levels of contaminants found in site surface water and groundwater, indicates the estimated concentration attributable to the site where it enters the tributary of Orphan School Creek to be below the adopted trigger values (refer to **Table 8.1**). It is noted that the maximum exceedance in surface water was reported to be 3.4 times the screening values (copper in pit 7), which is significantly less than the dilution factor estimated - indicating a sufficient conservatism with consideration to the limitations of the methodology adopted. On this basis, it is considered that the levels of contaminants are posing a low risk (in terms of toxicity) to the receiving environment.

Notwithstanding, there are likely to be other impacts to water quality within the catchment and improvements in water quality deriving from the site warrant consideration, in particular indications of high sediment load and occasion sheens in sampled stormwater pits.

[10] The Australian Methodology to Derive Ecological Investigation levels in Contaminated Soils. CSIRO Land and Water Science Report 43/09, prepared for the National Environment Protection Council, (CSIRO, 2009)

Table 8.1: DAF Applied to Average Concentrations in Discharge Water

Analyte	Screening Criteria (ANZECC 2000)	Max. Concentration (mg/L)	Max. Concentration with DAF (mg/L)	Mean Concentration (mg/L)	Mean Concentration with DAF (mg/L)
Groundwater					
Cadmium	0.0002	0.0004	3.53982E-06	0.0002	1.76991E-06
Chromium	0.001	0.073	0.000646018	0.014	0.000123894
Copper	0.0014	0.17	0.001504425	0.027	0.000238938
Lead	0.0034	0.072	0.000637168	0.013	0.000115044
Nickel	0.011	0.093	0.000823009	0.016	0.000141593
Zinc	0.008	0.34	0.00300885	0.063	0.000557522
Ammonia	0.9	0.93	0.008230088	0.33	0.002920354
Trichloroethene	0.33	0.76	0.006725664	0.095	0.000840708
Surface Water					
Chromium (filtered)	0.001	0.003	2.65487E-05	0.00081	7.16814E-06
Copper (filtered)	0.0014	0.012	0.000106195	0.0032	2.83186E-05

9. Conclusions and Recommendations

Based on the scope of works completed for this assessment and subject to the limitations presented in **Section 10**, the following conclusions are made:

- A program of surface water and groundwater sampling was undertaken by JBS&G in accordance with the Notice of Licence Variation (EPA 2016) for the waste management facility as located at 191 Miller Rd, Chester Hill, NSW.
- An assessment of quality assurance / quality control has been undertaken with regards to the generation of environmental data for the assessment. Environmental data has been found to be sufficiently reliable for the objectives of the assessment.
- Groundwater monitoring wells were installed at nine locations across the general extent of waste operations at the site. Based on the surveyed groundwater levels, the inferred direction of groundwater is to the south-west, as consistent with the surrounding topography. The sampled groundwater from each monitoring well location was analysed for a range of COPCs as identified in **Section 3**. Concentrations of COPCs were generally below the adopted screening criteria protective of fresh water ecosystems with the exception of a range of heavy metals and trichloroethlene (TCE). Heavy metals were reported at the highest concentrations within MW02 and MW03, which is located hydraulically up-gradient of the waste handling operation. The reported concentration of heavy metals within the extent and downgradient boundary (including MW08) of the waste handling operation were considered to be representative of urban geological conditions. There were no records or evidence (available to JBS&G during the investigation) of chlorinated solvents use or storage on site. In addition, the highest TCE concentration was reported in a location not used for the processing or storage of waste materials that could potentially impact groundwater. On a weight of evidence approach, it is considered unlikely that the current site activities are causing heavy metal and TCE impact to groundwater.
- Site surface water was sampled at two discharge points and one up-gradient location (relative to waste handling operations) over multiple rounds to assess the variability in surface water discharge from the site. The samples were analysed for a range of COPCs as identified in **Section 3**. Concentrations of COPCs were generally below the adopted screening criteria protective of fresh water ecosystems with the principal exception of TSS and heavy metals. The reported levels of TSS require management. The heavy metals zinc, chromium and copper were reported to exceed the screening criteria in Pit 7 on 8 February 2017 by a factor of 1.7, 1.2 and 3.4 respectively. In addition, a visible sheen was present within pit 15 on 14 February and 1 March 2017. On 14 February, the sheen appeared to be associated with a small oil stain on the ground surface in vicinity of the pit and where trucks enter and vacate the site.
- An assessment of impacts at a catchment level has been undertaken as based on the approach advised in CSIRO (2009). As reported in Civic (2008), the size of the Villawood Drain Catchment is estimated as 737 ha. The total area of the site, where potential impacts may discharge from surface water or groundwater is 6.5 ha (noting that the area of waste processing facility is approximately 3.7 ha). Comparison of this area to the smallest of the estimated catchment sizes generates a dilution attenuation factor (DAF) estimate of 100. Consideration of this DAF with the levels of contaminants found in site surface water and groundwater, indicates the estimated concentration attributable to the site where it enters the tributary of Orphan School Creek to be below the adopted trigger values.
- Notwithstanding, it is recommended that appropriate management procedures are adopted to minimise the level of contaminants in site surface water discharge. This would largely

comprise the management/removal of gross pollutants associated with sediments and constituents in the un-dissolved phase in surface water. Procedures to minimise pollutant loads in site stormwater discharge have been described in the Site Stormwater Audit Report (LP 2016).

- An ongoing surface water monitoring program is recommended in order to measure the success of any pollution mitigation measures to be implemented at the site. Details of a recommended monitoring program have been provided in **Appendix F**.

10. Limitations

This report has been prepared for use by the client who has commissioned the works in accordance with the project brief only, and has been based in part on information obtained from the client and other parties.

The advice herein relates only to this project and all results conclusions and recommendations made should be reviewed by a competent person with experience in environmental investigations, before being used for any other purpose.

JBS&G accepts no liability for use or interpretation by any person or body other than the client who commissioned the works. This report should not be reproduced without prior approval by the client, or amended in any way without prior approval by JBS&G, and should not be relied upon by other parties, who should make their own enquires.

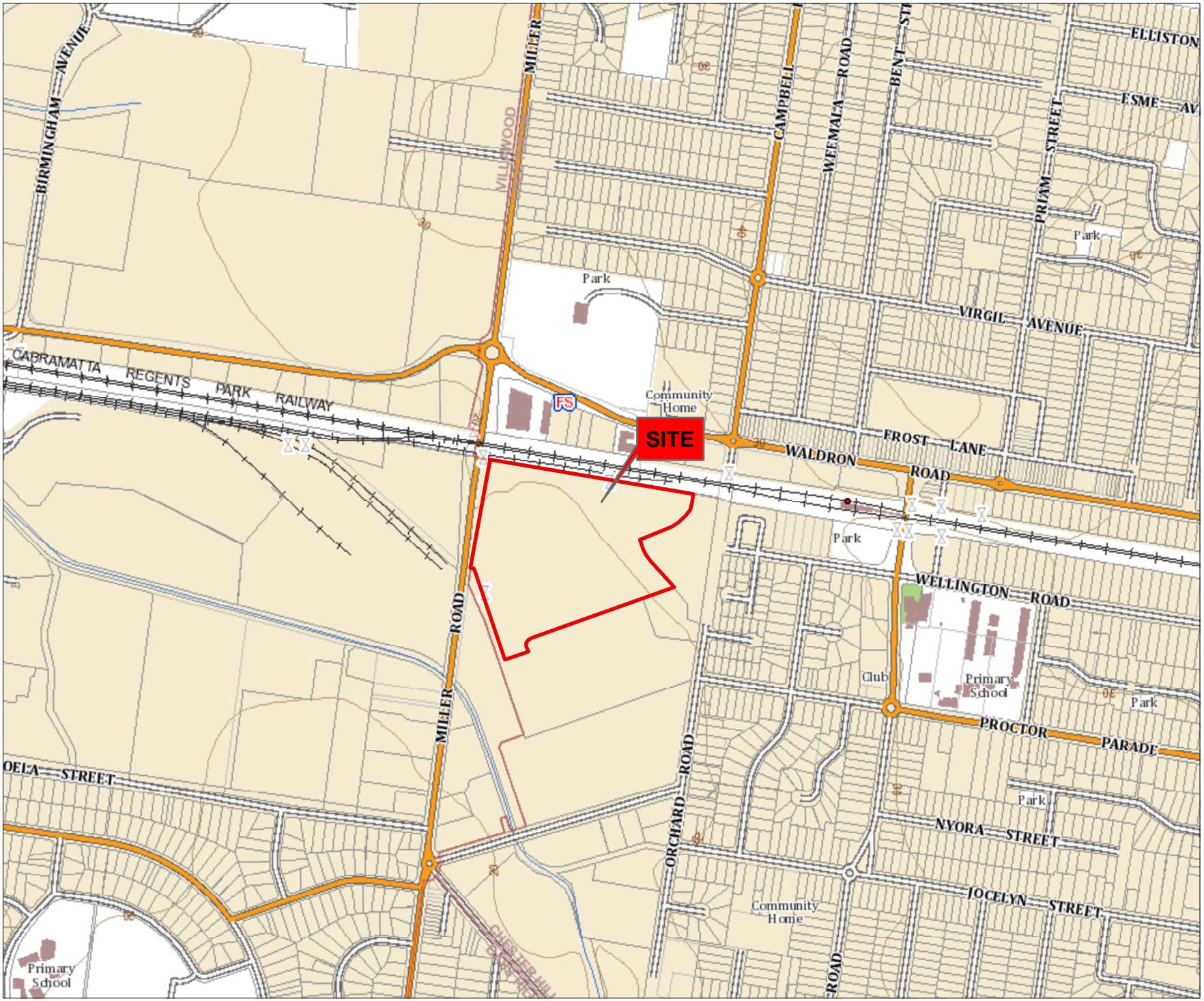
Sampling and chemical analysis of environmental media is based on appropriate guidance documents made and approved by the relevant regulatory authorities. Conclusions arising from the review and assessment of environmental data are based on the sampling and analysis considered appropriate based on the regulatory requirements.

Limited sampling and laboratory analyses were undertaken as part of the investigations undertaken, as described herein. Ground conditions between sampling locations and media may vary, and this should be considered when extrapolating between sampling points. Chemical analytes are based on the information detailed in the site history. Further chemicals or categories of chemicals may exist at the site, which were not identified in the site history and which may not be expected at the site.

Changes to the subsurface conditions may occur subsequent to the investigations described herein, through natural processes or through the intentional or accidental addition of contaminants. The conclusions and recommendations reached in this report are based on the information obtained at the time of the investigations.

This report does not provide a complete assessment of the environmental status of the site, and it is limited to the scope defined herein. Should information become available regarding conditions at the site including previously unknown sources of contamination, JBS&G reserves the right to review the report in the context of the additional information.

Figures



Legend:

Approximate Site Boundary

JBS&G

Job No: 52401

Client: Proactive Management Solutions

Version: L01 Rev 0	Date: 28-Mar-2017
Drawn By: RF	Checked By: CB

Scale 1:8,000

0 90 180

metres

Coor. Sys. GDA 1994 MGA Zone 56

191 Miller Road
Chester Hill, NSW

SITE LOCATION

FIGURE 1:

File Name: 52401_01
Reference:



Legend:

- Approximate Site Boundary
- Waste Operations
- Stormwater Pits
- Stormwater Flow Direction

JBS&G

Job No: 52401

Client: Proactive Management Solutions

Version: L01 Rev 0	Date: 28-Mar-2017
Drawn By: RF	Checked By: CB

Scale 1:2,528

0 30 60
metres

Coor. Sys. GDA 1994 MGA Zone 56

191 Miller Road
Chester Hill, NSW

SITE LAYOUT

FIGURE 2:

File Name: 52401_02
Reference: www.nearmap.com Imagery - 20170211



Legend:

- Approximate Site Boundary
- Waste Operations
- Stormwater Pits
- Stormwater Flow Direction
- Groundwater Monitoring Well Locations

JBS&G

Job No: 52401

Client: Proactive Management Solutions

Version: L01 Rev 0	Date: 28-Mar-2017
Drawn By: RF	Checked By: CB

Scale 1:2,528

0 30 60

metres

Coor. Sys. GDA 1994 MGA Zone 56

191 Miller Road
Chester Hill, NSW

SAMPLING LOCATIONS

FIGURE 3:

File Name: 52401_03
Reference:



Legend:

- Approximate Site Boundary
- Waste Operations
- Stormwater Pits
- Stormwater Flow Direction
- Groundwater Elevation (mAHD) - February 2017
- Groundwater Monitoring Well Locations
- Groundwater Flow Direction

JBS&G

Job No: 52401

Client: Proactive Management Solutions

Version: L01 Rev 0	Date: 28-Mar-2017
Drawn By: RF	Checked By: CB

Scale 1:2,528

0 30 60
metres

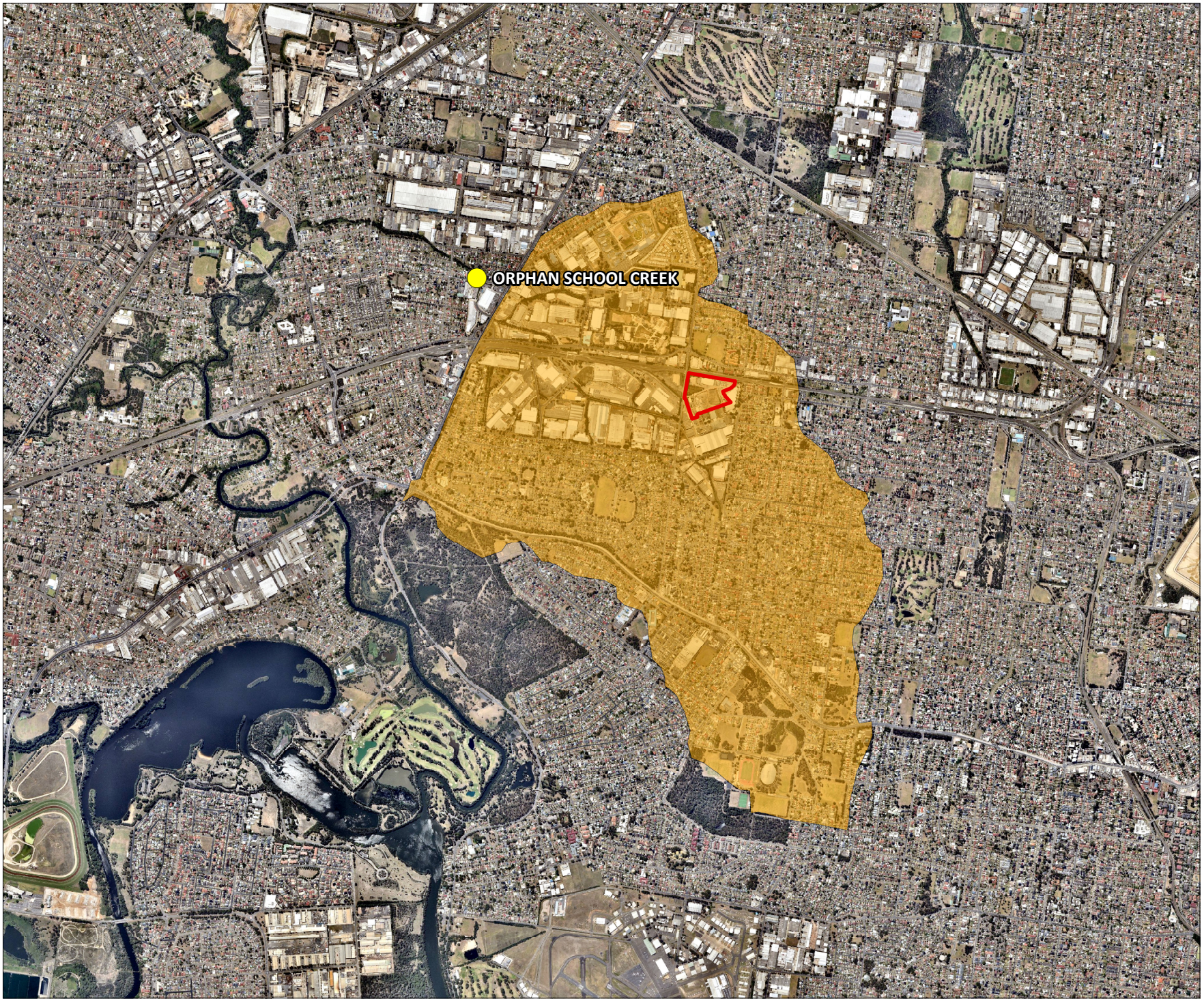
Coor. Sys. GDA 1994 MGA Zone 56

191 Miller Road
Chester Hill, NSW

GROUNDWATER ELEVATION (mAHD)

FIGURE 4:

File Name: 52401_04
Reference:



Legend:

- Nearest Surface Water Receptor - Orphan School Creek
- Approximate Site Boundary
- Villawood Drain Catchment - Contributing Catchment

JBS&G

Job No: 52401

Client: Proactive Management Solutions

Version: L01 Rev 0	Date: 28-Mar-2017
Drawn By: RF	Checked By: CB

Scale 1:35,000

0 420 840

metres

Coor. Sys. GDA 1994 MGA Zone 56

191 Miller Road
Chester Hill, NSW

VILLAWOOD DRAIN CATCHMENT

FIGURE 5:

File Name: 52401_05
Reference: BANKSTOWN CITY COUNCIL Villawood Drain Works-As-Executed Study CIVIC Design 2009

Appendix A Summary Tables

Table A: Groundwater Gauging Parameters
Project Number: 52401
Project Name: Chester Hill

Well ID	Samples Date	Easting	Northing	Depth to Water	Relative TOC Level[1]	Standing Water Level[1]	Electrical Conductivity	pH	Dissolved Oxygen	Temperature	Redox	Comments
				m TOC	mAHD	mAHD	µs/cm	-	mg/L	˚C	mV	
MW01	16/02/2017	314537.594	6248817.283	0.870	20.931	20.061	13144	7.14	3.60	21.9	66.4	No colour, clear, no odour, very slight sheen
MW02	16/02/2017	314672.735	6248814.557	0.420	23.610	23.190	16199	7.11	0.24	21.3	-25.2	Brown, high turbidity, no odour, no sheen
MW03	16/02/2017	314634.591	6248922.59	0.930	24.313	23.383	13602	7.33	0.11	22.8	-80.4	Brown/grey, high turbidity, no odour, slight sheen
MW04	16/02/2017	314574.436	6248905.077	1.050	23.028	21.978	14803	7.27	0.31	22.7	-46.1	Light brown/grey, high turbidity, no odour, slight sheen
MW05	16/02/2017	314414.2155	6248850.413	2.030	20.515	18.485	19940	7.23	0.35	22.5	37.7	Grey, moderate turbidity, no odour, slight sheen
MW06	16/02/2017	314466.896	6248859.71	1.380	20.633	19.253	16866	7.28	0.44	23.3	62.4	No colour, clear, no odour, no sheen
MW07	16/02/2017	314480.7595	6248812.928	1.160	20.322	19.162	12135	7.41	0.78	25.5	63.7	Grey/brown, moderate turbidity, no odour, slight sheen
MW08	16/02/2017	314460.489	6248728.215	2.200	20.495	18.295	14404	7.44	1.57	26.1	70.3	No colour, clear, no odour, slight sheen
MW09	16/02/2017	314508.3734	6248770.082	1.195	20.875	19.680	17188	7.38	0.35	22.6	34.2	No colour, clear, no odour, slight sheen

Notes:
[1] mAHD levels based on survey data from top of pipe.

Table B: Groundwater Analytical Data
Project Number: 52401
Project Name: Chester Hill

	Metals & Metalloids																TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEX						Non-Metallic Inorganics			
	Arsenic (Total)	Arsenic (Total) (Filtered)	Cadmium	Cadmium (Filtered)	Chromium (Total)	Chromium (Total) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Mercury (Inorganic)	Mercury (Inorganic) (Filtered)	Nickel	Nickel (Filtered)	Zinc	Zinc (Filtered)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Ammonia	Ammonia (as N)	Phosphate total (as P)	Sulphate (as SO4)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1.00		0.20		1.00		1.00		1.00		0.10		1.00		5.00		10.00	50.00	100.00	100.00	100.00	50.00	100.00	100.00	50.00	10.00	10.00	1.00	1.00	1.00	1.00	2.00	3.00		10.00	5.00	1000.00
ANZECC 2000 Fresh Water 95%			0.2	0.2	1[#1]	1[#1]	1.4	1.4	3.4	3.4	0.6	0.6	11	11	8	8												950[#4]	80[#4]	180[#4]	350[#4]		625[#4]	900[#2]	744[#3]		
ANZECC 2000 Fresh Water Low Reliability																																					
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics							10000	10000							30000	30000													30	250			20[#7]	5000[#6]			2500000
NHMRC (2011) (as amended December 2014) (Factor 10) – Health	100	100	20	20			20000	20000	100	100	10	10	200	200														1[#7]	300[#7]	800[#7]			6000				5000000
Sample ID	**Date**	**Laboratory**																																			
MW01	16/02/2017	534613	<1	-	<0.2	-	<1	-	<1	-	<0.1	-	2	-	9	-	140	<50	<100	<100	<100	<50	<100	<100	<50	140	140	<1	<1	<1	<1	<2	<3	-	700	<50	600,000
MW02	16/02/2017	534613	7	-	<0.2	-	16	-	43	-	18	-	<0.1	-	25	-	90	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	440	260	420,000
MW03	16/02/2017	534613	18	-	0.4	-	73	-	170	-	72	-	0.3	-	93	-	340	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	930	3800	420,000
MW04	16/02/2017	534613	4	-	<0.2	-	9	-	23	-	9	-	<0.1	-	13	-	47	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	290	460	620,000
MW05	16/02/2017	534613	<5	-	<1	-	<5	-	<5	-	<5	-	<0.5	-	<5	-	<5	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	190	70	1,400,000
MW06	16/02/2017	534613	<1	-	<0.2	-	<1	-	<1	-	<1	-	<0.1	-	4	-	9	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	<10	<50	2,000,000
MW07	16/02/2017	534613	<1	-	<0.2	-	<1	-	<1	-	<1	-	<0.1	-	3	-	14	-	360	<50	<100	<100	<100	<50	<100	<100	<50	360	360	<1	<1	<1	<1	<2	<3	-	70	<50	2,500,000
MW08	16/02/2017	534613	<5	-	<1	-	<5	-	<5	-	<5	-	<0.5	-	<5	-	21	-	950	<50	<100	<100	<100	<50	<100	<100	<50	950	950	<1	<1	<1	<1	<2	<3	-	20	<50	1,600,000
MW09	16/02/2017	534613	<1	-	<0.2	-	32	-	<1	-	<1	-	<0.1	-	1	-	7	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	350	<50	650,000
QC01	16/02/2017	534613	8	-	<0.2	-	18	-	46	-	18	-	<0.1	-	26	-	83	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	410	250	430,000
QC01A	16/02/2017	162071	-	6	-	0.1	-	<1	-	<1	-	<1	-	<0.05	-	<1	-	3	<10	<50	<100	<100	-	<50	<100	<100	<50	<10	<10	<1	<1	<1	<1	<2	-	480	-	76	440,000

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Refer to ANZECC 2000 Table 8.3.14
#5:Refer to ANZECC 2000 Table 8.3.11
#6:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and temperature).
#7:Multiple factor not applied
#8:Adopted from WHO Drinking Water Guideline 2011

Table B: Groundwater Analytical Data
Project Number: 52401
Project Name: Chester Hill

			Polycyclic Aromatic Hydrocarbons																		Chlorinated Alkanes																			
			Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Trichlorofluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	1.00
ANZECC 2000 Fresh Water 95%																	16								6500															
ANZECC 2000 Fresh Water Low Reliability																									90[#5]								240[#5]				4000[#5]		
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																																							
NHMRC (2011) (as amended December 2014) (Factor 10) – Health							0.1																					30					30				40		
Sample ID	**Date**	**Laboratory**																																						
MW01	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW02	16/02/2017	534613	<0.01	<0.01	0.02	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	0.04	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW03	16/02/2017	534613	<0.01	<0.01	0.02	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	<0.01	0.03	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW04	16/02/2017	534613	<0.01	<0.01	0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW05	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW06	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW07	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
MW08	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	5	<1	-	<1	<1	<1	<1	<1	<1	<1
MW09	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
QC01	16/02/2017	534613	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	0.02	<0.01	<0.01	0.07	<0.01	0.09	-	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1
QC01A	16/02/2017	162071	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<0.1	<0.1	-	0	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	-	<10

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
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#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
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#5:Refer to ANZECC 2000 Table 8.3.11
#6:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and temper
#7:Multiple factor not applied
#8:Adopted from WHO Drinking Water Guideline 2011

Table B: Groundwater Analytical Data
Project Number: 52401
Project Name: Chester Hill

			Chlorinated Alkenes											Trihalomethanes				Monocyclic Aromatic Hydrocarbons										Miscellaneous Hydrocarbons							Chlorinated Benzenes						
			1,1-dichloroethene	1,1-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane	1,2,3-trichlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00					1.00		1.00	1.00	1.00	1.00		1.00	1.00			1.00	1.00	1.00	1.00	0.10
ANZECC 2000 Fresh Water 95%																																				10	170	160	260	60		
ANZECC 2000 Fresh Water Low Reliability			700[#5]					1900[#5]		70[#5]			330[#5]			370[#5]																										
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																											40											10	200	30	100	
NHMRC (2011) (as amended December 2014) (Factor 10) – Health			300							500			200[#8]	3	2500	2500	2500	2500									300		10			10						15000		400	3000	
Sample ID	**Date**	**Laboratory**																																								
MW01	16/02/2017	534613	25	-	-	<1	<1	<1	<1	<1	<1	<1	140	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW02	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW03	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW04	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW05	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW06	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW07	16/02/2017	534613	28	-	-	<1	<1	260	<1	<1	<1	<1	140	22	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW08	16/02/2017	534613	62	-	-	<1	<1	79	<1	<1	<1	<1	760	2	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
MW09	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
QC01	16/02/2017	534613	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1	-	-	<1	<1	<1	<1	<0.1
QC01A	16/02/2017	162071	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<1	<1	-	<1	<1	<1	<1	<1	<1	<0.2

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
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#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Refer to ANZECC 2000 Table 8.3.14
#5:Refer to ANZECC 2000 Table 8.3.11
#6:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and temper
#7:Multiple factor not applied
#8:Adopted from WHO Drinking Water Guideline 2011

Table B: Groundwater Analytical Data
Project Number: 52401
Project Name: Chester Hill

	Organochlorine Pesticides																					Major Cations						Ionic Balance			Other			
	4,4-DDE	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	DDD	Dieldrin	DDT	Chlordane	delta-BHC	Endosulfan alpha	Endosulfan beta	gamma-Chlordane	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Toxaphene	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Bicarbonate Alkalinity (as CaCO3)	Carbonate Alkalinity (as CaCO3)	Total Alkalinity (as CaCO3)	Nitroglycerine (NG)	2-Propanone (Acetone)	Carbon disulfide	Hexachlorobutadiene
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	mg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.10	0.10	0.10		0.10	0.10	0.10	0.10	1.00	0.10	0.10	0.10		0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	10.00	500.00		500.00		500.00		20.00	5.00	20.00	200.00	1.00	1.00	
ANZECC 2000 Fresh Water 95%								0.01	0.08						0.02			0.09		0.2		0.2													
ANZECC 2000 Fresh Water Low Reliability																																			
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																																			
NHMRC (2011) (as amended December 2014) (Factor 10) – Health								90	20									3		100	3000														7
Sample ID	**Date**	**Laboratory**																																		
MW01	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	52,000	-	290,000	-	6700	-	1100	<10	1100	<500	<1	<1	-
MW02	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	90,000	-	400,000	-	13,000	-	1000	<10	1000	<500	<5	<1	-
MW03	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	120,000	-	330,000	-	20,000	-	1200	<10	1200	<500	<5	<1	-
MW04	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	91,000	-	380,000	-	18,000	-	1100	<10	1100	<500	<10	<1	-
MW05	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	80,000	-	550,000	-	6600	-	1100	<10	1100	<500	<5	<1	-
MW06	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	25,000	-	480,000	-	5200	-	1400	<10	1400	<500	<5	<1	-
MW07	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	33,000	-	280,000	-	<5000	-	950	<10	950	<500	<5	<1	-
MW08	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	76,000	-	580,000	-	7000	-	880	<10	880	<500	<5	<1	-
MW09	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	74,000	-	380,000	-	20,000	-	1000	<10	1000	<500	<1	<1	-
QC01	16/02/2017	534613	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<1	<0.1	<0.1	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<10	91,000	-	410,000	-	19,000	-	1000	<10	1000	<500	<1	<1	-
QC01A	16/02/2017	162071	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	-	<0.2	<0.2	<0.2	<0.2	-	-	90,000	-	430,000	-	19,000	-	<5	-	<200	-	-	<1

Env Stds Comments

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Table B: Groundwater Analytical Data
Project Number: 52401
Project Name: Chester Hill

	Organophosphorus Pesticides																																			
	Azinphos methyl	Bromophos-ethyl	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	EPN	Ethion	Ethoprophos	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Mevinphos	Monocrotophos	Naled	Omethoate	Parathion	Parathion methyl	Phorate	Pirimiphos methyl	Pyrazophos	Ronnel	Sulprofos	Terbufos	Tetrachlorvinphos	Tokuthion	Trichloronate
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	0.20		2.00	0.20	0.20	20.00	2.00	20.00	0.20	0.20	0.20	2.00	2.00	0.20	2.00	0.20	2.00	2.00	0.20	2.00	2.00	2.00	2.00	2.00	0.20	2.00	2.00	20.00	2.00	0.20	2.00	2.00	2.00	2.00	2.00
ANZECC 2000 Fresh Water 95%	0.02			0.01					0.01		0.15					0.2			0.05						0.004											
ANZECC 2000 Fresh Water Low Reliability																																				
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																																				
NHMRC (2011) (as amended December 2014) (Factor 10) – Health	300	100	20	100					40	50	70	40		40	10	70	100	70	700		50	20		10	200	7		900	200		100	9	1000		
Sample ID	**Date**	**Laboratory**																																		
MW01	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW02	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW03	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW04	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW05	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW06	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW07	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW08	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
MW09	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
QC01	16/02/2017	534613	<2	-	<2	<20	<2	<20	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<2	<2	<2
QC01A	16/02/2017	162071	<0.2	<0.2	-	<0.2	<0.2	-	-	-	<0.2	<0.2	<0.2	-	-	<0.2	-	<0.2	-	-	<0.2	-	-	-	-	-	<0.2	-	-	-	<0.2	-	-	-	-	-

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
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Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

	Metals & Metalloids																TPHs (NEPC 1999)					TRHs (NEPC 2013)						BTEX						Non-Metallic Inorganics			
	Arsenic (Total)	Arsenic (Total) (Filtered)	Cadmium	Cadmium (Filtered)	Chromium (Total)	Chromium (Total) (Filtered)	Copper	Copper (Filtered)	Lead	Lead (Filtered)	Mercury (Inorganic)	Mercury (Inorganic) (Filtered)	Nickel	Nickel (Filtered)	Zinc	Zinc (Filtered)	C6-C9 Fraction	C10-C14 Fraction	C15-C28 Fraction	C29-C36 Fraction	C10-C36 Fraction (Total)	>C10-C16 Fraction	>C16-C34 Fraction	>C34-C40 Fraction	>C10-C16 less Naphthalene (F2)	C6-C10 Fraction	C6-C10 less BTEX (F1)	Benzene	Ethylbenzene	Toluene	Xylene (o)	Xylene (m & p)	Xylene (Total)	Ammonia	Ammonia (as N)	Nitrate (as N)	Sulphate (as S04)
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1.00	1.00	0.20	0.10	1.00	1.00	1.00	1.00	1.00	1.00	0.10	0.05	1.00	1.00	5.00	1.00	10.00	50.00	100.00	100.00	100.00	50.00	100.00	100.00	50.00	10.00	10.00	1.00	1.00	1.00	1.00	2.00	3.00		10.00	5.00	1000.00
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]			0.54	0.54	2.5[#1]	2.5[#1]	3.5	3.5	13.6	13.6	0.6	0.6	27.5	27.5	20	20												950[#5]	80[#5]	180[#5]	350[#5]		625[#5]	900[#2]	744[#3]	2400[#4]	
ANZECC 2000 Fresh Water Low Reliability																																					
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics							10000	10000							30000	30000													30	250			20[#8]	5000[#7]			2500000
NHMRC (2011) (as amended December 2014) (Factor 10) – Health	100	100	20	20			20000	20000	100	100	10	10	200	200														1[#8]	300[#8]	800[#8]			6000			225000[#9]	5000000
Sample ID	**Date**	**Laboratory**																																			
7		534514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<20	<50	200	<100	200	<50	300	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
7	8/02/2017	533646	-	2	-	<0.2	-	3	-	12	-	7	-	<0.1	-	3	-	35	<20	130	100	<100	230	60	100	<100	60	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
7	14/02/2017	534036	-	4	-	<0.2	-	<1	-	<1	-	<1	-	<0.1	-	4	-	<5	<20	440	1500	500	2440	270	1900	100	270	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
7	1/03/2017	536199	2	<1	<0.2	<0.2	7	<1	59	<1	100	<1	<0.1	<0.1	12	<1	360	<5	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	<10	80	14,000
7	7/03/2017	536902	2	2	<0.2	<0.2	2	1	9	3	<1	<1	<0.1	<0.1	5	6	41	19	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	730	450	610,000
15		534514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<20	100	700	100	900	210	800	<100	210	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
15	8/02/2017	533646	-	2	-	<0.2	-	<1	-	2	-	<1	-	<0.1	-	2	-	<5	<20	440	1500	800	2740	430	2100	300	430	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
15	14/02/2017	534036	-	3	-	<0.2	-	<1	-	5	-	<1	-	<0.1	-	4	-	8	<20	1300	7700	4600	13,600	1900	11,000	1800	1900	<20	<20	<1	<1	1	<1	<2	<3	-	-	-	-
15	1/03/2017	536199	1	<1	<0.2	<0.2	3	<1	17	3	41	<1	<0.1	<0.1	3	<1	120	<5	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	20	80	53,000
15	7/03/2017	536902	4	2	<0.2	<0.2	3	<1	8	<1	9	<1	<0.1	<0.1	8	5	250	13	<20	440	800	600	1840	370	1300	300	370	<20	<20	<1	<1	<1	<1	<2	<3	-	490	40	710,000
17		534514	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
17	8/02/2017	533646	-	2	-	<0.2	-	1	-	4	-	<1	-	<0.1	-	2	-	<5	<20	160	100	<100	260	60	200	<100	60	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
17	14/02/2017	534036	-	2	-	<0.2	-	<1	-	8	-	<1	-	<0.1	-	3	-	9	<20	460	1100	700	2260	220	1600	200	220	<20	<20	<1	<1	<1	<1	<2	<3	-	-	-	-
17	1/03/2017	536199	2	1	0.3	<0.2	10	1	60	2	120	<1	<0.1	<0.1	15	<1	660	<5	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	<10	90	53,000
17	7/03/2017	536902	3	2	<0.2	<0.2	<1	<1	4	<1	2	<1	<0.1	<0.1	6	5	31	11	<20	460	500	100	1060	400	600	<100	400	<20	<20	<1	<1	<1	<1	<2	<3	-	470	<20	600,000
17	10/03/2017	537474	3	-	<0.2	-	2	-	7	-	8	-	<0.1	-	4	-	32	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	210	170	250,000
QA20160310	10/03/2017	537474	4	-	<0.2	-	4	-	12	-	18	-	<0.1	-	6	-	69	-	<20	<50	<100	<100	<100	<50	<100	<100	<50	<20	<20	<1	<1	<1	<1	<2	<3	-	210	180	250,000
QC20170310	10/03/2017	163394	-	2	-	<0.1	-	<1	-	1	-	<1	-	<0.05	-	2	-	5	<10	<50	<100	<100	-	<50	<100	<100	<50	<10	<10	<1	<1	<1	<1	<2	-	200	-	160	200,000

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Based on NIWA 2013 Nitrate toxicity effects on freshwater species
#5:Refer to ANZECC 2000 Table 8.3.14
#6:Refer to ANZECC 2000 Table 8.3.11
#7:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and temperature).
#8:Multiple factor not applied
#9:Based on drinking water criteria for protection of children over 3 months in age and adults of 100mg/L NO3 as NO3.
#10:Adopted from WHO Drinking Water Guideline 2011
#11: Hardness factor applied based on Table 3.4.4 in ANZECC (2000) assuming 'moderate' hardness category (average hardness measured in surface water was appromiately 100 mg/L (as CaCO3)

Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

			SVOC																		Chlorinated Alkanes																					
			Butyl benzyl phthalate	Dibenz[a.j]acridine	Dibenzofuran	2-Chloronaphthalene	1-Chloronaphthalene	1-Naphthylamine	2-Picoline	2-Naphthylamine	3.3-Dichlorobenzidine	4-Chlorophenyl phenyl ether	Dimethylaminoazobenzene	Acetophenone	Bis(2-chloroethoxy)methane	Bis(2-chloroisopropyl)ether	2.6-Dinitrotoluene	Diphenylamine	N-Nitrosodipropylamine	N-Nitrosopiperidine	N-Nitrosodibutylamine	1,1,1,2-tetrachloroethane	1,1,1-trichloroethane	1,1,2,2-tetrachloroethane	1,1,2-trichloroethane	1,1-dichloroethane	1,2,3-trichloropropane	1,2-dibromo-3-chloropropane	1,2-dichloroethane	1,2-dichloropropane	1,3-dichloropropane	2,2-dichloropropane	Bromochloromethane	Carbon tetrachloride	Chloroethane	Chloromethane	Dichlorodifluoromethane	Dichloromethane	Hexachloroethane	Pentachloroethane	Trichlorofluoromethane
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			2.00	1.00	2.00	2.00	5.00	2.00	1.00	2.00	1.00	2.00	2.00	2.00	2.00	2.00	4.00	2.00	2.00	2.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00	2.00		1.00
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]																									6500														360			
ANZECC 2000 Fresh Water Low Reliability																										90[#6]							240[#6]				4000[#6]			
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																																									
NHMRC (2011) (as amended December 2014) (Factor 10) – Health																													30				30				40			
Sample ID	**Date**	**Laboratory**																																								
7		534514	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	5
7	8/02/2017	533646	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
7	14/02/2017	534036	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
7	1/03/2017	536199	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
7	7/03/2017	536902	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
15		534514	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
15	8/02/2017	533646	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
15	14/02/2017	534036	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
15	1/03/2017	536199	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
15	7/03/2017	536902	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17		534514	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17	8/02/2017	533646	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17	14/02/2017	534036	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17	1/03/2017	536199	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17	7/03/2017	536902	<2	<1	<2	<2	<5	<2	<1	<2	<1	<2	<2	<2	<2	<2	<4	<2	<2	<2	<2	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<2	-	<1
17	10/03/2017	537474	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<5	-	<1
QA20160310	10/03/2017	537474	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	-	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<5	-	<1
QC20170310	10/03/2017	163394	<10	-	<5	<2	-	<5	-	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<10	<10	<10	-	<2	<2	<10

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
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#8:Multiple factor not applied
#9:Based on drinking water criteria for protection of children over 3 months in age
#10:Adopted from WHO Drinking Water Guideline 2011
#11: Hardness factor applied based on Table 3.4.4 in ANZECC (2000) assuming 'mc

Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

	Chlorinated Alkenes												Trihalomethanes				Anilines					Monocyclic Aromatic Hydrocarbons										Miscellaneous Hydrocarbons						
	1,1-dichloroethene	1,1-dichloropropene	2-chlorotoluene	3-chloropropene	4-chlorotoluene	cis-1,2-dichloroethene	cis-1,3-dichloropropene	Tetrachloroethene	trans-1,2-dichloroethene	trans-1,3-dichloropropene	Trichloroethene	Vinyl Chloride	Bromodichloromethane	Chloroform	Dibromochloromethane	Tribromomethane	2-Nitroaniline	3-Nitroaniline	4-Chloroaniline	4-Nitroaniline	Aniline	1,2,4-trimethyl benzene	1,3,5-trimethyl benzene	4-isopropyl toluene	Bromobenzene	Isopropylbenzene	n-butyl benzene	n-propyl benzene	sec-butyl benzene	Styrene	Tert-butyl benzene	1,2-dibromoethane	2-Butanone (MEK)	4-Methyl-2-pentanone (MIBK)	Bromomethane	Cyclohexane	Dibromomethane	Iodomethane
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1.00			1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	4.00				2.00	1.00	1.00		1.00	1.00				1.00		1.00	1.00	1.00	1.00		1.00	1.00
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]																					250																	
ANZECC 2000 Fresh Water Low Reliability	700[#6]					1900[#6]		70[#6]			330[#6]			370[#6]																									
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																														40								
NHMRC (2011) (as amended December 2014) (Factor 10) – Health	300							500			200[#10]	3	2500	2500	2500	2500														300		10			10			
Sample ID	**Date**	**Laboratory**																																				
7		534514	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
7	8/02/2017	533646	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	1	<1	-	<1	<1
7	14/02/2017	534036	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	5	10	<1	-	<1	<1
7	1/03/2017	536199	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
7	7/03/2017	536902	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	3	<1	-	<1	<1
15		534514	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	5	16	<1	-	<1	<1
15	8/02/2017	533646	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	3	<1	-	<1	<1
15	14/02/2017	534036	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	6	18	<1	-	<1	<1
15	1/03/2017	536199	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
15	7/03/2017	536902	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	2	<1	-	<1	<1	-	-	-	<1	-	<1	<1	1	<1	-	<1	<1
17		534514	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
17	8/02/2017	533646	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	1	<1	-	<1	<1
17	14/02/2017	534036	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
17	1/03/2017	536199	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
17	7/03/2017	536902	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<4	-	-	-	<2	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
17	10/03/2017	537474	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	-	-	-	<5	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
QA20160310	10/03/2017	537474	<1	-	-	<1	<1	<1	<1	<1	<1	<1	<1	<1	<5	<1	<1	<5	-	-	-	<5	<1	<1	-	<1	<1	-	-	-	<1	-	<1	<1	<1	<1	-	<1	<1
QC20170310	10/03/2017	163394	<1	<1	<1	-	<1	<1	<1	<1	<1	<1	<1	<10	<1	<1	<1	<1	<5	<5	<5	<5	<5	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	-	-	<10	<1	<1	-

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Based on NIWA 2013 Nitrate toxicity effects on freshwater species
#5:Refer to ANZECC 2000 Table 8.3.14
#6:Refer to ANZECC 2000 Table 8.3.11
#7:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and tempe
#8:Multiple factor not applied
#9:Based on drinking water criteria for protection of children over 3 months in age
#10:Adopted from WHO Drinking Water Guideline 2011
#11: Hardness factor applied based on Table 3.4.4 in ANZECC (2000) assuming 'mc

Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

			Polycyclic Aromatic Hydrocarbons																						Nitrobenzenes			Nitrotoluenes	Solvents	
			2-Methylnaphthalene	3-Methylcholanthrene	7,12-Dimethylbenz(a)anthracene	Acenaphthene	Acenaphthylene	Anthracene	Benz(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (WHO)	Benzo(b,j)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	N-2-Fluorenyl Acetamide	Phenanthrene	Pyrene	PAHs (Total)	Total Positive PAHs	1,3-dinitrobenzene	Nitrobenzene	Pentachloronitrobenzene	2,4-dinitrotoluene	2-Propanone (Acetone)	Benzyl chloride
			µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL			2.00	2.00	2.00	0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01		0.01	0.01	0.01			2.00	2.00	4.00	1.00	1.00
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]																				16									550		65		
ANZECC 2000 Fresh Water Low Reliability																																	
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																																	
NHMRC (2011) (as amended December 2014) (Factor 10) – Health								0.1																				300					
Sample ID	**Date**	**Laboratory**																															
7		534514	<2	<2	<2	<0.01	<0.01 - 0.2	<0.01 - 0.6	<0.01 - 0.8	<0.01 - 0.9	-	<0.01 - 0.9	<0.01 - 0.4	<0.01 - 0.5	<0.01 - 0.8	<0.01	<0.01 - 1.2	<0.01 - 0.2	<0.01 - 0.4	<0.01 - 0.2	-	<0.01 - 3.1	<0.01 - 1.5	11.7	-	-	<2	<2	<4	<1	<1
7	8/02/2017	533646	<2	<2	<2	<0.05	<0.05	<0.05	<0.05	<0.01	-	<0.05	<0.05	<0.05	<0.05	<0.05	<1 - 0.1	<0.05	<0.05	<0.05	-	<1 - 0.1	<1 - 0.1	0.3	-	-	<2	<2	<4	12	<1
7	14/02/2017	534036	<2	<2	<2	<0.05	<0.05	<1 - 1.3	<1 - 0.5	<1 - 0.4	-	<1 - 0.3	<1 - 0.1	<1 - 0.1	<1 - 0.2	<0.05	<1 - 0.4	<1 - 0.4	<1 - 0.2	<1 - 0.1	-	<1 - 4.3	<1 - 0.7	9	-	-	<2	<2	<4	<1	<1
7	1/03/2017	536199	<2	<2	<2	<0.05	<1 - 0.1	<0.05	<1 - 0.2	<1 - 0.2	-	<1 - 0.3	<1 - 0.1	<1 - 0.2	<1 - 0.2	<0.05	<1 - 0.2	<0.05	<1 - 0.1	<0.05	-	<1 - 0.1	<1 - 0.3	<1 - 2	-	-	<2	<2	<4	35	<1
7	7/03/2017	536902	<2	<2	<2	<0.05	<0.05	<0.05	<1 - 0.1	<0.01	-	<1 - 0.1	<0.05	<1 - 0.1	<1 - 0.1	<0.05	<1 - 0.1	<0.05	<0.05	<0.05	-	<0.05	<1 - 0.1	0.6	-	-	<2	<2	<4	<1	<1
15		534514	<2	<2	<2	<0.01	<0.01 - 0.1	<0.01 - 0.2	<0.01 - 0.4	<0.01 - 0.5	-	<0.01 - 0.5	<0.01 - 0.3	<0.01 - 0.3	<0.01 - 0.6	<0.01	<0.01 - 0.8	<0.01	<0.01 - 0.2	<0.01 - 0.1	-	<0.01 - 0.9	<0.01 - 1	5.9	-	-	<2	<2	<4	28	<1
15	8/02/2017	533646	<2	<2	<2	<0.05	<0.05	<0.05	<1 - 0.1	<1 - 0.1	-	<1 - 0.1	<1 - 0.1	<1 - 0.1	<1 - 0.1	<0.05	<1 - 0.2	<0.05	<0.05	<1 - 0.1	-	<1 - 0.3	<1 - 0.2	1.4	-	-	<2	<2	<4	28	<1
15	14/02/2017	534036	<2	<2	<2	<0.05	<0.05	<1 - 0.1	<1 - 0.2	<1 - 0.1	-	<1 - 0.2	<1 - 0.1	<1 - 0.1	<1 - 0.2	<0.05	<1 - 0.3	<0.05	<1 - 0.1	<0.05	-	<1 - 0.6	<1 - 0.3	2.3	-	-	<2	<2	<4	<1	<1
15	1/03/2017	536199	<2	<2	<2	<0.05	<0.05	<0.05	<1 - 0.1	<0.01	-	<1 - 0.1	<0.05	<0.05	<1 - 0.1	<0.05	<1 - 0.1	<0.05	<0.05	<0.05	-	<0.05	<1 - 0.1	<1 - 0.5	-	-	<2	<2	<4	15	<1
15	7/03/2017	536902	<2	<2	<2	<0.05	<1 - 0.1	<1 - 0.1	<1 - 0.3	<1 - 0.3	-	<1 - 0.4	<1 - 0.2	<1 - 0.2	<1 - 0.3	<0.05	<1 - 0.4	<0.05	<1 - 0.1	<1 - 0.3	-	<1 - 0.2	<1 - 0.5	3.4	-	-	<2	<2	<4	<1	<1
17		534514	<2	<2	<2	<0.01	<0.01	<0.01	<0.01 - 0.1	<0.01 - 0.1	-	<0.01 - 0.2	<0.01 - 0.1	<0.01 - 0.1	<0.01 - 0.2	<0.01	<0.01 - 0.2	<0.01	<0.01 - 0.1	<0.01 - 0.1	-	<0.01 - 0.2	<0.01 - 0.3	1.7	-	-	<2	<2	<4	<1	<1
17	8/02/2017	533646	<2	<2	<2	<0.05	<0.05	<0.05	<0.05	<0.01	-	<1 - 0.1	<0.05	<0.05	<1 - 0.1	<0.05	<1 - 0.1	<0.05	<0.05	<0.05	-	<1 - 0.1	<1 - 0.1	0.5	-	-	<2	<2	<4	12	<1
17	14/02/2017	534036	<2	<2	<2	<0.05	<0.05	<1 - 0.1	<1 - 0.2	<1 - 0.1	-	<1 - 0.2	<1 - 0.1	<1 - 0.1	<1 - 0.2	<0.05	<1 - 0.2	<0.05	<1 - 0.1	<1 - 0.1	-	<1 - 0.2	<1 - 0.3	1.9	-	-	<2	<2	<4	<1	<1
17	1/03/2017	536199	<2	<2	<2	<0.05	<0.05	<0.05	<1 - 0.1	<1 - 0.1	-	<1 - 0.2	<1 - 0.1	<1 - 0.1	<1 - 0.1	<0.05	<1 - 0.2	<0.05	<1 - 0.1	<0.05	-	<1 - 0.1	<1 - 0.3	<1 - 1.4	-	-	<2	<2	<4	<1	<1
17	7/03/2017	536902	<2	<2	<2	<0.05	<0.05	<0.05	<1 - 0.1	<0.01	-	<1 - 0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	-	<0.05	<1 - 0.1	0.3	-	-	<2	<2	<4	13	<1
17	10/03/2017	537474	<5	<5	<5	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-	<50	<5	<5	<1	<5
QA20160310	10/03/2017	537474	<5	<5	<5	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	<0.01	-	<0.01	<0.01	<0.01	-	-	<50	<5	<5	<1	<5
QC20170310	10/03/2017	163394	<2	<2	<2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.5	-	<0.1	-	<0.1	<0.1	<0.1	<0.1	<0.1	<0.2	<2	<0.1	<0.1	-	0	<5	<5	<5	-	-	-

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Based on NIWA 2013 Nitrate toxicity effects on freshwater species
#5:Refer to ANZECC 2000 Table 8.3.14
#6:Refer to ANZECC 2000 Table 8.3.11
#7:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and tempe
#8:Multiple factor not applied
#9:Based on drinking water criteria for protection of children over 3 months in age
#10:Adopted from WHO Drinking Water Guideline 2011
#11: Hardness factor applied based on Table 3.4.4 in ANZECC (2000) assuming 'mc

Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

	Chlorinated Benzenes												Phenols															Phthalates					Mis. Chemicals			erbicides & Fungicid			OPPs	
	1,2,3,4-tetrachlorobenzene	1,2,3,5-tetrachlorobenzene	1,2,3-trichlorobenzene	1,2,4,5-tetrachlorobenzene	1,2,4-trichlorobenzene	1,2-Dichlorobenzene	1,3,5-trichlorobenzene	1,3-dichlorobenzene	1,4-dichlorobenzene	Chlorobenzene	Hexachlorobenzene	Pentachlorobenzene	2,3,4,6-tetrachlorophenol	2,4,5-trichlorophenol	2,4,6-trichlorophenol	2,4-dichlorophenol	2,4-dimethylphenol	2,4-dinitrophenol	2,6-dichlorophenol	2-chlorophenol	2-Methylphenol	2-nitrophenol	3- & 4-Methylphenol	4,6-Dinitro-2-methylphenol	4-Chloro-3-Methylphenol	4-nitrophenol	Phenol	Carbon disulfide	Di(2-ethylhexy) phthalate	Dibutyl phthalate	Diethyl phthalate	Dimethyl phthalate	di-n-octylphthalate	Hexachlorobutadiene	Hexachlorocyclopentadiene	Isophorone	Dinoseb	Propyzamide	Trifluralin	Ethylmethanesulfonate	Safrole
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
EQL	1.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	2.00	2.00	1.00	2.00	1.00	1.00	1.00	2.00	2.00	2.00	2.00	4.00	5.00	10.00	1.00	2.00	1.00	5.00	2.00	2.00	2.00	2.00	1.00	4.00			1.00	1.00		
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]			10		170	160		260	60				20		20	160		45		490							320			26	1000	3700							4.4		
ANZECC 2000 Fresh Water Low Reliability																																									
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics						10		200	30	100					20	3				1																					
NHMRC (2011) (as amended December 2014) (Factor 10) – Health						15000			400	3000					200	2000				3000								100					7				700	900		
Sample ID	**Date**	**Laboratory**																																							
7		534514	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1000	<3	<3	<3	<5	<6	<5	<10	<1000	<3	<1	<20	<2	<2	<2	<2	<2	<1000	-	-	<1	<1	-	-
7	8/02/2017	533646	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
7	14/02/2017	534036	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<5	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
7	1/03/2017	536199	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
7	7/03/2017	536902	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
15		534514	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1000	<3	<3	<3	<5	10	<5	<10	<1000	<3	<1	<20	<2	<2	<2	<2	<2	<1000	-	-	<1	<1	-	-
15	8/02/2017	533646	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
15	14/02/2017	534036	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<5	<3	<1	20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
15	1/03/2017	536199	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
15	7/03/2017	536902	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	10	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
17		534514	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1000	<3	<3	<3	<5	<6	<5	<10	<1000	<3	<1	<20	<2	<2	<2	<2	<2	<1000	-	-	<1	<1	-	-
17	8/02/2017	533646	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
17	14/02/2017	534036	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<5	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
17	1/03/2017	536199	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
17	7/03/2017	536902	<1	<1	<1	<2	<2	<1	<1	<1	<1	<1	<2	<2	<2	<1	<10	<1	<1	<1	<3	<3	<3	<5	<6	<5	<10	<1	<3	<1	<20	<2	<2	<2	<2	<2	<4	-	-	<1	<1	-	-
17	10/03/2017	537474	<5	<5	<5	<5	<5	<1	<5	<1	<1	<1	<5	<5	<10	<10	<10	<3	<3	<30	<3	<3	<3	<10	<6	<30	<10	<30	<3	<1	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	-	-
QA20160310	10/03/2017	537474	<5	<5	<5	<5	<5	<1	<5	<1	<1	<1	<5	<5	<10	<10	<10	<3	<3	<30	<3	<3	<3	<10	<6	<30	<10	<30	<3	<1	<5	<5	<5	<5	<5	<5	<5	-	-	<5	<5	-	-
QC20170310	10/03/2017	163394	-	-	<1	<2	<1	<1	-	<1	<1	<1	<2	<2	<2	<2	<2	<2	<2	<20	<2	<2	<2	<2	<4	<20	<10	<20	<2	-	<10	<10	<10	<10	<10	<1	<5	<5	<10	-	-	<5	<5

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Table C: Surface Water Analytical Results
Project Number: 52401
Project Name: Chester Hill

	Organochlorine Pesticides																				Major Cations								Maj. Anions	Ionic Balance					Other	
	4,4-DDE	Aldrin	alpha-BHC	alpha-Chlordane	beta-BHC	DDD	Dieldrin	DDT	delta-BHC	Endosulfan alpha	Endosulfan beta	gamma-Chlordane	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	Heptachlor	Heptachlor Epoxide	Lindane	Methoxychlor	Pentachlorophenol	Calcium	Calcium (Filtered)	Magnesium	Magnesium (Filtered)	Potassium	Potassium (Filtered)	Sodium	Sodium (Filtered)	Chloride	Bicarbonate Alkalinity (as CaCO3)	Carbonate Alkalinity (as CaCO3)	EC_Lab	Total Alkalinity as CaCO3	pH_Lab	Carbon disulfide	Turbidity
	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	mg/L	mg/L	µS/cm	µg/L	ph Units	µg/L	ntu
EQL	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00		2.00	2.00	2.00	2.00	2.00	2.00	2.00	1.00	10.00	500.00		500.00		500.00		500.00		1000.00	5.00	5.00	1.00		0.10	1.00	0.10
ANZECC 2000 Fresh Water 95% (metals hardness corrected)[11]								0.01						0.02			0.09		0.2		10																
ANZECC 2000 Fresh Water Low Reliability																																					
NHMRC (2011) (as amended December 2014) (Factor 10) – Aesthetics																												1800000	1800000	2500000							50
NHMRC (2011) (as amended December 2014) (Factor 10) – Health								90									3		100	3000	100																
Sample ID	**Date**	**Laboratory**																																			
7		534514	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	2300	-	7.8	<1	-
7	8/02/2017	533646	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	850	-	8.2	<1	-
7	14/02/2017	534036	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	2600	-	7.3	<1	-
7	1/03/2017	536199	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<10	66,000	-	4300	-	3100	-	7100	-	4200	95	<5	110	-	8.9	<1	68,000
7	7/03/2017	536902	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	10	200,000	-	27,000	-	19,000	-	120,000	-	120,000	190	<5	1600	-	6.7	<1	170
15		534514	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	1100	-	7.6	<1	-
15	8/02/2017	533646	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	760	-	7.4	<1	-
15	14/02/2017	534036	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	1100	-	7.1	<1	-
15	1/03/2017	536199	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<10	50,000	-	2900	-	3700	-	10,000	-	7900	58	<5	280	-	8.1	<1	320
15	7/03/2017	536902	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	440,000	-	56,000	-	19,000	-	100,000	-	110,000	400	<5	1900	-	6.7	<1	1100
17		534514	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	1200	-	7.8	<1	-
17	8/02/2017	533646	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	690	-	7.8	<1	-
17	14/02/2017	534036	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	-	-	-	-	-	-	-	-	-	-	-	1100	-	7.5	<1	-
17	1/03/2017	536199	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<2	<10	170,000	-	7400	-	5200	-	13,000	-	9500	140	<5	330	-	8.5	<1	16,000
17	7/03/2017	536902	<2	<2	<2	-	<2	<2	<2	<4	<2	<2	<2	-	<2	<2	<2	<2	<2	<2	<2	<1	<10	260,000	-	32,000	-	16,000	-	120,000	-	100,000	200	<5	1700	-	7.1	<1	35
17	10/03/2017	537474	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<10	130,000	-	13,000	-	6200	-	45,000	-	55,000	230	<10	1000	-	7.9	<1	40
QA20160310	10/03/2017	537474	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	-	<5	<5	<5	<5	<5	<5	<5	<5	<10	140,000	-	13,000	-	7700	-	46,000	-	54,000	220	<10	1000	-	7.9	<1	98
QC20170310	10/03/2017	163394	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<2	<10	-	140,000	-	14,000	-	8400	-	48,000	40,000	220	<5	-	220,000	7.8	-	65

Env Stds Comments

#1:Conservative trigger value taken from CrVI. Speciation maybe required.
#2:Ammonia freshwater trigger value (adjust for pH 6 - 9 Table 8.3.7)
#3:Trigger value converted from Ammonia (adjust for pH 6 - 9 Table 8.3.7)
#4:Based on NIWA 2013 Nitrate toxicity effects on freshwater species
#5:Refer to ANZECC 2000 Table 8.3.14
#6:Refer to ANZECC 2000 Table 8.3.11
#7:TV based on NH3 as NH3 (needs to be calculated based on in situ pH and tempe
#8:Multiple factor not applied
#9:Based on drinking water criteria for protection of children over 3 months in age
#10:Adopted from WHO Drinking Water Guideline 2011
#11: Hardness factor applied based on Table 3.4.4 in ANZECC (2000) assuming 'mc

Appendix B Borelogs

MW01

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 7
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 4
Screen Bottom Depth (mbgs): 6.85

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Fill - Concrete Layer		
				0.10		Fill	Fill - CLAY - Yellow-brown, homogeneous, dry, medium-high plasticity, very soft		40L purged from well
			1						
			2	2.00		CL-ML	Silty CLAY - Yellow-brown, homogeneous, dry, low plasticity, firm		
			3						
				3.50		CL-ML	Silty CLAY - Brown-grey, homogeneous, dry, non-plastic, very stiff		
			4	4.00		CL-ML	Silty CLAY - Grey, homogeneous, damp, medium plasticity, stiff, igneous gravel inclusions		
	▶		5	5.00		CL-ML	Silty CLAY - Grey, homogeneous,wet, medium plasticity, stiff, igneous gravel inclusions		
				5.50		CL-ML	Silty CLAY - Grey, homogeneous, saturated, medium plasticity, stiff, igneous gravel inclusions		
			6						
			7	7.00			Borehole MW01 terminated at 7m		
			8						
			9						
			10						

MW02

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 8.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 7
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5.5
Screen Bottom Depth (mbgs): 8.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Fill - Silty CLAY - Brown, heterogeneous, damp, firm, inclusions of terracotta, nails		60L purged from well
				0.20		Fill	Fill - Sandy GRAVEL - Grey, heterogeneous, damp, loose, well-graded, fine-medium gravels		
			1	0.50		Fill	Fill - Clayey SAND - Brown, heterogeneous, dry		
			2	1.50		CL-ML	Silty CLAY - Brown, dry, no plasticity, firm, inclusions of grey clay and weathered shale		
				2.00		CL-ML	Silty CLAY - Grey, homogeneous, firm		
			3	2.50		CL-ML	Silty CLAY - Brown-grey, homogeneous, firm		
			4						
			5						
				5.50		SHALE	SHALE - Dark grey, homogeneous, dry		
			6						
	▶		7	7.00		SHALE	SHALE - Dark grey, homogeneous, saturated		
			8						
				8.50			Borehole MW02 terminated at 8.5m		
			9						
			10						

MW03

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 8.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 6.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5.5
Screen Bottom Depth (mbgs): 8.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Fill - Concrete Layer		
				0.20		Fill	Fill - CLAY - Orange/red/brown with grey mottles, heterogeneous, firm		70L purged from well
				0.50		Fill	Fill - CLAY - Grey with orange mottles, heterogeneous, firm		
			1						
			2						
				2.50		CL-ML	Silty CLAY - Brown, dry, low plasticity, inclusions of igneous gravels		
			3						
				3.00		CL-ML	Silty CLAY - Grey-brown, medium-low plasticity, inclusions of igneous gravels		
			4						
				4.00		SHALE	SHALE - Dark grey, homogeneous, dry, hard		
			5						
			6						
	▼			6.50		SHALE	SHALE - Dark grey, homogeneous, saturated, hard		
			7						
			8						
				8.50			Borehole MW03 terminated at 8.5m		
			9						
			10						

MW04

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 8.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 5.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 5.5
Screen Bottom Depth (mbgs): 8.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Fill - Concrete Layer		
				0.20		Fill	Fill - CLAY - Orange, homogeneous, medium plasticity, stiff		
			1	0.80		Fill	Fill - CLAY - Grey with orange, homogeneous, medium plasticity, stiff		
				1.50		Fill	Fill - CLAY - Orange, homogeneous, low plasticity, stiff		
			2						
			3						
			4						
				4.50		SHALE	SHALE - Grey, homogeneous, weathered, dry, inclusions of brown clay		
	▶		5						
				5.50		SHALE	SHALE - Grey, homogeneous, weathered, wet, inclusions of brown clay		
			6	6.00		SHALE	SHALE - Grey, homogeneous, weathered, damp-moist, inclusions of brown clay		
			7						
			8						
				8.50			Borehole MW04 terminated at 8.5m		
			9						
			10						

MW05

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 7
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 4
Screen Bottom Depth (mbgs): 7

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger						Fill	Fill - Concrete Layer		
				0.20		Fill	Fill - Silty CLAY - Brown, heterogeneous, damp, firm, root inclusions		40L purged from well
			1	0.50		CL	CLAY - Yellow-brown with grey mottles, dry, high plasticity, stiff		
			2	1.50		CL	CLAY - Orange, dry, high plasticity, stiff		
			3						
			4	4.00		CL	CLAY - Orange, damp, medium plasticity, stiff		
	▶		5						
			6	5.00		CL	CLAY - Orange, moist-wet, medium plasticity, stiff		
			7						
				7.00			Borehole MW05 terminated at 7m		
			8						
			9						
			10						

MW06

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 7.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 6.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 4.5
Screen Bottom Depth (mbgs): 7.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger	▼		1	0.05		Fill	Fill - ASPHALT layer		
						Fill	Fill - Gravelly CLAY - Dark grey, heterogeneous, damp, low plasticity, firm		40L purged from well
				0.40		CL-SC	Sandy CLAY - Orange, homogeneous, damp, low plasticity, damp, firm		
			2	1.50		CL-SC	Sandy CLAY - Light brown, homogeneous, damp, low plasticity, damp, firm		
			3	2.00		CL	CLAY - Yellow-orange with grey mottles, homogeneous, medium plasticity, firm		
			4	4.50		CL	CLAY - Yellow-light brown, homogeneous, medium plasticity, firm		
			5	5.50		CL	CLAY - Yellow-light brown, homogeneous, wet, medium plasticity, firm		
			6	6.00		CL	CLAY - Grey, homogeneous, damp, low plasticity		
			7	6.50		CL	CLAY - Grey, homogeneous, saturated, low plasticity		
			8	7.50			Borehole MW06 terminated at 7.5m		
			9						
			10						

MW07

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 6
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 4.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 3
Screen Bottom Depth (mbgs): 6

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger	▼		1	0.05		Fill	Fill - ASPHALT layer		
						Fill	Fill - Gravelly CLAY - Dark grey, heterogeneous, damp, medium course gravels, no plasticity		40L purged from well
				0.50		CL	CLAY - Yellow-brown, homogeneous, dry, high plasticity, stiff-very stiff		
			2	1.00		CL-ML	Silty CLAY - Yellow-brown with grey mottles, homogeneous, damp, low-medium plasticity		
			3						
			4	3.50		CL-ML	Silty CLAY - Yellow-light brown with grey mottles, homogeneous, damp, medium-high plasticity		
			5	4.50		CL-ML	Silty CLAY - Yellow-light brown with grey mottles, homogeneous, wet, medium-high plasticity		
			6	5.50		CL-ML	Silty CLAY - Yellow-light brown with grey mottles, wet, low-medium plasticity, hard		
			7	6.00			Borehole MW07 terminated at 6m		
			8						
			9						
			10						

MW08

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 6
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 4.5
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 3
Screen Bottom Depth (mbgs): 6

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger			0			Fill	CLAY - Grey-orange, damp, medium plasticity, very stiff		30L purged from well
				0.50		CL-ML	Silty CLAY - Yellow-brown, homogeneous, dry, medium plasticity, firm		
			1						
			2						
			3						
			4						
				4.00		CL-ML	Silty CLAY - Yellow-brown, homogeneous, moist, soft		
	▶			4.50		CL-ML	Silty CLAY - Yellow-brown, homogeneous, saturated, soft		
			5						
			6						
				6.00			Borehole MW08 terminated at 6m		
			7						
			8						
			9						
			10						

MW09

Project Number: 52401
Client: Proactive Management Solutions
Project Name: Chester Hill
Site Address: 191 Miller Street, Chester Hill

Date: 2/09/2017
Logged By: Lauren Luedecke
Contractor: Terratest
Total Hole Depth (mbgs): 7.5
Bore Diameter (mm): 150

Eastings (GDA 94):
Northings (GDA 94):
Zone/Area:
Reference Level: Ground Surface
Elevation (m):

Water Level Initial (mbgs): 6
Surface Finish: Roadbox
Casing / Screen Type: Class 18 PVC - 50mm
Casing Bottom Depth (mbgs): 4.5
Screen Bottom Depth (mbgs): 7.5

Method	Water (mbgs)	Well Details	Depth (mbgs)	Contact (mbgs)	Graphic Log	Lithological Class	Lithological Description	Samples Tests Remarks	Additional Observations
Solid Flight Auger			0			Fill	Fill - Concrete Layer		40L purged from well
				0.50		CL-ML	Silty CLAY - Orange with red mottles, homogeneous, damp, low plasticity, firm		
			1						
			2						
			3						
			4	4.00		CL	CLAY - Yellow-orange, homogeneous, dry, low-medium plasticity, firm		
			5	5.00		CL-ML	Silty CLAY - Brown, homogeneous, dry, low plasticity, hard		
	▶		6	6.00		CL-ML	Silty CLAY - Brown, homogeneous, saturated, low plasticity, hard		
			7						
				7.50			Borehole MW09 terminated at 7.5m		
			8						
			9						
			10						

Appendix C Laboratory Reports and Chain of Custody Documentation

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **534613-W-V2**
Project name CHESTER HILL
Project ID 52401
Received Date Feb 17, 2017

Client Sample ID			**MW01**	**MW02**	**MW03**	**MW04**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe17697**	**S17-Fe17698**	**S17-Fe17699**	**S17-Fe17700**
Date Sampled			**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**
Test/Reference	LOR	Unit				
Nitroglycerine (NG)	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia (as N)	0.01	mg/L	0.70	0.44	0.93	0.29
Phosphate total (as P)	0.05	mg/L	< 0.05	0.26	3.8	0.46
Sulphate (as SO4)	5	mg/L	600	420	420	620
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	0.14	< 0.02	< 0.02	< 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	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	96	87	66	72
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	0.025	< 0.001	< 0.001	< 0.001
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW01	MW02	MW03	MW04
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17697	S17-Fe17698	S17-Fe17699	S17-Fe17700
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.005	< 0.005	< 0.01
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	0.14	< 0.001	< 0.001	< 0.001
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Fluorobenzene (surr.)	1	%	90	99	75	81
4-Bromofluorobenzene (surr.)	1	%	96	87	66	72
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	0.14	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	0.14	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	0.00002	0.00002	0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001

Client Sample ID			MW01	MW02	MW03	MW04
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17697	S17-Fe17698	S17-Fe17699	S17-Fe17700
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	0.00002	0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	4E-05	3E-05	1E-05
2-Fluorobiphenyl (surr.)	1	%	60	90	102	87
p-Terphenyl-d14 (surr.)	1	%	69	112	114	118
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
a-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
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-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
g-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
Dibutylchlorendate (surr.)	1	%	102	117	99	59
Tetrachloro-m-xylene (surr.)	1	%	59	57	77	53
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

Client Sample ID			MW01	MW02	MW03	MW04
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17697	S17-Fe17698	S17-Fe17699	S17-Fe17700
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
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	%	93	92	92	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	1100	1000	1200	1100
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Total Alkalinity (as CaCO3)	20	mg/L	1100	1000	1200	1100
Alkali Metals						
Calcium	0.5	mg/L	52	90	120	91
Magnesium	0.5	mg/L	290	400	330	380
Potassium	0.5	mg/L	6.7	13	20	18
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	0.007	0.018	0.004
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	0.0004	< 0.0002
Chromium	0.001	mg/L	< 0.001	0.016	0.073	0.009
Copper	0.001	mg/L	< 0.001	0.043	0.17	0.023
Lead	0.001	mg/L	< 0.001	0.018	0.072	0.009
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	0.0003	< 0.0001
Nickel	0.001	mg/L	0.002	0.025	0.093	0.013
Zinc	0.005	mg/L	0.009	0.090	0.34	0.047

Client Sample ID			MW05	MW06	MW07	MW08
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17701	S17-Fe17702	S17-Fe17703	S17-Fe17704
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Nitroglycerine (NG)	0.5	mg/L	< 0.5	< 0.5	< 0.5	< 0.5
Ammonia (as N)	0.01	mg/L	0.19	< 0.01	0.07	0.02
Phosphate total (as P)	0.05	mg/L	0.07	< 0.05	< 0.05	< 0.05
Sulphate (as SO4)	5	mg/L	1400	2000	2500	1600
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	0.36	0.95
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	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
4-Bromofluorobenzene (surr.)	1	%	91	94	110	106
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	0.028	0.062
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.005
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
2-Propanone (Acetone)	0.001	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			MW05	MW06	MW07	MW08
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17701	S17-Fe17702	S17-Fe17703	S17-Fe17704
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	< 0.005
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	0.26	0.079
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	< 0.002
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	0.14	0.76
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	0.022	0.002
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	< 0.003
Fluorobenzene (surr.)	1	%	87	89	118	109
4-Bromofluorobenzene (surr.)	1	%	91	94	110	106
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	0.36	0.95
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	0.36	0.95
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	96	112	68	55
p-Terphenyl-d14 (surr.)	1	%	117	131	131	79

Client Sample ID			MW05	MW06	MW07	MW08
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17701	S17-Fe17702	S17-Fe17703	S17-Fe17704
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
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
a-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
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
d-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
g-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
Dibutylchlorendate (surr.)	1	%	63	87	96	86
Tetrachloro-m-xylene (surr.)	1	%	55	59	56	85
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

Client Sample ID			MW05	MW06	MW07	MW08
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17701	S17-Fe17702	S17-Fe17703	S17-Fe17704
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
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	%	93	90	90	93
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	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
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	1100	1400	950	880
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	< 10
Total Alkalinity (as CaCO3)	20	mg/L	1100	1400	950	880
Alkali Metals						
Calcium	0.5	mg/L	80	25	33	76
Magnesium	0.5	mg/L	550	480	280	580
Potassium	0.5	mg/L	6.6	5.2	< 5	7.0
Heavy Metals						
Arsenic	0.001	mg/L	< 0.005	< 0.001	< 0.001	< 0.005
Cadmium	0.0002	mg/L	< 0.001	< 0.0002	< 0.0002	< 0.001
Chromium	0.001	mg/L	< 0.005	< 0.001	< 0.001	< 0.005
Copper	0.001	mg/L	< 0.005	< 0.001	< 0.001	< 0.005
Lead	0.001	mg/L	< 0.005	< 0.001	< 0.001	< 0.005
Mercury	0.0001	mg/L	< 0.0005	< 0.0001	< 0.0001	< 0.0005
Nickel	0.001	mg/L	< 0.005	0.004	0.003	< 0.005
Zinc	0.005	mg/L	< 0.005	0.009	0.014	0.021

Client Sample ID			MW09	QC01	RINSATE	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17705	S17-Fe17706	S17-Fe17707	S17-Fe17708
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	-	-	-	-
Nitroglycerine (NG)	0.5	mg/L	< 0.5	< 0.5	< 0.5	-
Ammonia (as N)	0.01	mg/L	0.35	0.41	< 0.01	-
Phosphate total (as P)	0.05	mg/L	< 0.05	0.25	< 0.05	-
Sulphate (as SO4)	5	mg/L	650	430	< 5	-

Client Sample ID			MW09	QC01	RINSATE	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17705	S17-Fe17706	S17-Fe17707	S17-Fe17708
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	90
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	90
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	88
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	86
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	87
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	88
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	88
4-Bromofluorobenzene (surr.)	1	%	85	94	84	112
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH C6-C10	0.02	mg/L	-	-	-	89
Volatile Organics						
Naphthalene[N02]	0.01	mg/L	-	-	-	81
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-

Client Sample ID			MW09	QC01	RINSATE	[R20]TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe17705	S17-Fe17706	S17-Fe17707	S17-Fe17708
Date Sampled			Feb 16, 2017	Feb 16, 2017	Feb 16, 2017	Feb 16, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	84	100	85	-
4-Bromofluorobenzene (surr.)	1	%	85	94	84	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Fluorene	0.00001	mg/L	< 0.00001	0.00002	< 0.00001	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Phenanthrene	0.00001	mg/L	< 0.00001	0.00007	< 0.00001	-
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Total PAH*	0.00001	mg/L	< 0.00001	9E-05	< 0.00001	-
2-Fluorobiphenyl (surr.)	1	%	92	75	108	-
p-Terphenyl-d14 (surr.)	1	%	121	106	145	-

Client Sample ID			MW09	QC01	RINSATE	[R20]TRIP SPIKE
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe17705**	**S17-Fe17706**	**S17-Fe17707**	**S17-Fe17708**
Date Sampled			**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Chlordanes - Total	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4.4'-DDD	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
4.4'-DDE	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
4.4'-DDT	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
a-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Aldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
b-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
d-BHC	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Dieldrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan I	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan II	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endosulfan sulphate	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin aldehyde	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Endrin ketone	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
g-BHC (Lindane)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Heptachlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Heptachlor epoxide	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Hexachlorobenzene	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Methoxychlor	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Toxaphene	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Dibutylchlorendate (surr.)	1	%	57	65	97	-
Tetrachloro-m-xylene (surr.)	1	%	59	109	55	-
Organophosphorus Pesticides						
Azinphos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bolstar	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chlorfenvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chlorpyrifos	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Chlorpyrifos-methyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Coumaphos	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Demeton-S	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Demeton-O	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diazinon	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dichlorvos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Disulfoton	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
EPN	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ethion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ethoprop	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ethyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fenitrothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fensulfothion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fenthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Malathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Merphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methyl parathion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Mevinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Monocrotophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naled	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			MW09	QC01	RINSATE	[R20]TRIP SPIKE
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe17705**	**S17-Fe17706**	**S17-Fe17707**	**S17-Fe17708**
Date Sampled			**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**	**Feb 16, 2017**
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Omethoate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Phorate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pirimiphos-methyl	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Pyrazophos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Ronnel	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Terbufos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Tetrachlorvinphos	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Tokuthion	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Trichloronate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Triphenylphosphate (surr.)	1	%	90	79	112	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	1000	1000	< 20	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	< 10	-
Total Alkalinity (as CaCO3)	20	mg/L	1000	1000	< 20	-
Alkali Metals						
Calcium	0.5	mg/L	74	91	< 0.5	-
Magnesium	0.5	mg/L	380	410	< 0.5	-
Potassium	0.5	mg/L	20	19	< 0.5	-
Heavy Metals						
Arsenic	0.001	mg/L	< 0.001	0.008	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.032	0.018	< 0.001	-
Copper	0.001	mg/L	< 0.001	0.046	< 0.001	-
Lead	0.001	mg/L	< 0.001	0.018	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.001	0.026	< 0.001	-
Zinc	0.005	mg/L	0.007	0.083	< 0.005	-

Client Sample ID			TRIP BLANK
Sample Matrix			**Water**
Eurofins | mgt Sample No.			**S17-Fe17709**
Date Sampled			**Feb 16, 2017**
Test/Reference	LOR	Unit	
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
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

Client Sample ID			TRIP BLANK
Sample Matrix			Water
Eurofins | mgt Sample No.			S17-Fe17709
Date Sampled			Feb 16, 2017
Test/Reference	LOR	Unit	
BTEX			
Xylenes - Total	0.003	mg/L	< 0.003
4-Bromofluorobenzene (surr.)	1	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH C6-C10	0.02	mg/L	< 0.02
Volatile Organics			
Naphthalene[N02]	0.01	mg/L	< 0.01

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
TRH C6-C10 less BTEX (F1)	Melbourne	Feb 17, 2017	14 Day
- Method: LM-LTM-ORG-2010			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Melbourne	Feb 22, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
BTEX	Melbourne	Feb 20, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 20, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Melbourne	Feb 20, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 20, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Nitroglycerine (NG)	Melbourne	Feb 22, 2017	7 Day
- Method: USEPA Method 8332			
Ammonia (as N)	Melbourne	Feb 20, 2017	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Phosphate total (as P)	Melbourne	Feb 20, 2017	28 Day
- Method: APHA 4500-P E. Phosphorous			
Sulphate (as SO4)	Melbourne	Feb 24, 2017	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Feb 20, 2017	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Alkali Metals	Melbourne	Feb 20, 2017	180 Day
- Method: USEPA 6010 Alkali Metals			
Eurofins | mgt Suite B10			
Polycyclic Aromatic Hydrocarbons	Melbourne	Feb 22, 2017	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Organochlorine Pesticides	Melbourne	Feb 22, 2017	7 Day
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Melbourne	Feb 22, 2017	7 Day
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Feb 22, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Metals M8	Melbourne	Feb 21, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

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Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: CHESTER HILL
Project ID: 52401

Order No.:
Report #: 534613
Phone: 02 8245 0300
Fax:

Received: Feb 17, 2017 2:57 PM
Due: Feb 24, 2017
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Ammonia (as N)	Calcium	Magnesium	Nitroglycerine (NG)	Phosphate total (as P)	Potassium	Sulphate (as SO4)	Alkalinity (speciated)	Volatile Organics	Eurofins | mgt Suite B10	BTEX and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 18217																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	MW01	Feb 16, 2017		Water	S17-Fe17697	X	X	X	X	X	X	X	X	X	X	
2	MW02	Feb 16, 2017		Water	S17-Fe17698	X	X	X	X	X	X	X	X	X	X	
3	MW03	Feb 16, 2017		Water	S17-Fe17699	X	X	X	X	X	X	X	X	X	X	
4	MW04	Feb 16, 2017		Water	S17-Fe17700	X	X	X	X	X	X	X	X	X	X	
5	MW05	Feb 16, 2017		Water	S17-Fe17701	X	X	X	X	X	X	X	X	X	X	
6	MW06	Feb 16, 2017		Water	S17-Fe17702	X	X	X	X	X	X	X	X	X	X	
7	MW07	Feb 16, 2017		Water	S17-Fe17703	X	X	X	X	X	X	X	X	X	X	
8	MW08	Feb 16, 2017		Water	S17-Fe17704	X	X	X	X	X	X	X	X	X	X	
9	MW09	Feb 16, 2017		Water	S17-Fe17705	X	X	X	X	X	X	X	X	X	X	

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Sample Detail						Ammonia (as N)	Calcium	Magnesium	Nitroglycerine (NG)	Phosphate total (as P)	Potassium	Sulphate (as SO4)	Alkalinity (speciated)	Volatile Organics	Eurofins | mgt Suite B10	BTEX and Volatile TRH
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 18217																
10	QC01	Feb 16, 2017		Water	S17-Fe17706	X	X	X	X	X	X	X	X	X	X	
11	RINSATE	Feb 16, 2017		Water	S17-Fe17707	X	X	X	X	X	X	X	X	X	X	
12	TRIP SPIKE	Feb 16, 2017		Water	S17-Fe17708											X
13	TRIP BLANK	Feb 16, 2017		Water	S17-Fe17709											X
Test Counts						11	11	11	11	11	11	11	11	11	11	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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							
Nitroglycerine (NG)	mg/L	< 0.5			0.5	Pass	
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Phosphate total (as P)	mg/L	< 0.05			0.05	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Volatile Organics							
Naphthalene	mg/L	< 0.01			0.01	Pass	
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	
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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	
Dichlorodifluoromethane	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	
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	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	mg/L	< 0.02			0.02	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	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	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endosulfan sulphate	mg/L	< 0.0001			0.0001	Pass	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Total Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	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							
Nitroglycerine (NG)	%	101			75-125	Pass	
Ammonia (as N)	%	89			70-130	Pass	
Phosphate total (as P)	%	97			70-130	Pass	
Sulphate (as SO4)	%	117			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	102			70-130	Pass	
TRH C10-C14	%	96			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	89			70-130	Pass	
Toluene	%	90			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH C6-C10	%	120			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
Naphthalene	%	70			70-130	Pass	
1.1-Dichloroethene	%	83			70-130	Pass	
1.1.1-Trichloroethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	98			70-130	Pass	
1.2-Dichloroethane	%	95			70-130	Pass	
Trichloroethene	%	86			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	70			70-130	Pass	
TRH C6-C10	%	120			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	84			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	81			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	83			70-130	Pass	
Benzo(g.h.i)perylene	%	76			70-130	Pass	
Benzo(k)fluoranthene	%	101			70-130	Pass	
Chrysene	%	101			70-130	Pass	
Dibenz(a.h)anthracene	%	94			70-130	Pass	
Fluoranthene	%	95			70-130	Pass	
Fluorene	%	89			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	80			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Phenanthrene	%	84			70-130	Pass	
Pyrene	%	96			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
4.4'-DDD	%	109			70-130	Pass	
4.4'-DDE	%	107			70-130	Pass	
4.4'-DDT	%	109			70-130	Pass	
a-BHC	%	95			70-130	Pass	
Aldrin	%	78			70-130	Pass	
b-BHC	%	125			70-130	Pass	
d-BHC	%	96			70-130	Pass	
Dieldrin	%	109			70-130	Pass	
Endosulfan I	%	103			70-130	Pass	
Endosulfan II	%	103			70-130	Pass	
Endosulfan sulphate	%	101			70-130	Pass	
Endrin	%	114			70-130	Pass	
Endrin aldehyde	%	101			70-130	Pass	
Endrin ketone	%	119			70-130	Pass	
g-BHC (Lindane)	%	87			70-130	Pass	
Heptachlor	%	113			70-130	Pass	
Heptachlor epoxide	%	129			70-130	Pass	
Hexachlorobenzene	%	80			70-130	Pass	
Methoxychlor	%	97			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	123			70-130	Pass	
Dimethoate	%	77			70-130	Pass	
Ethion	%	106			70-130	Pass	
Fenitrothion	%	86			70-130	Pass	
Methyl parathion	%	86			70-130	Pass	
Mevinphos	%	77			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	89			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	100			70-130	Pass	
Total Alkalinity (as CaCO3)	%	110			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	92			70-130	Pass	
Magnesium	%	97			70-130	Pass	
Potassium	%	87			70-130	Pass	
LCS - % Recovery							

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heavy Metals									
Arsenic			%	101			80-120	Pass	
Cadmium			%	96			80-120	Pass	
Chromium			%	96			80-120	Pass	
Copper			%	97			80-120	Pass	
Lead			%	96			80-120	Pass	
Mercury			%	82			75-125	Pass	
Nickel			%	98			80-120	Pass	
Zinc			%	100			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Sulphate (as SO4)	M17-Fe18356	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S17-Fe18770	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	B17-Fe18693	NCP	%	122			70-130	Pass	
Dimethoate	B17-Fe18693	NCP	%	73			70-130	Pass	
Ethion	B17-Fe18693	NCP	%	114			70-130	Pass	
Fenitrothion	B17-Fe18693	NCP	%	70			70-130	Pass	
Methyl parathion	B17-Fe18693	NCP	%	80			70-130	Pass	
Mevinphos	B17-Fe18693	NCP	%	70			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Fe18770	NCP	%	83			70-130	Pass	
Spike - % Recovery									
				Result 1					
Nitroglycerine (NG)	S17-Fe17698	CP	%	84			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
4.4'-DDD	S17-Fe17698	CP	%	95			70-130	Pass	
4.4'-DDE	S17-Fe17698	CP	%	108			70-130	Pass	
4.4'-DDT	S17-Fe17698	CP	%	104			70-130	Pass	
a-BHC	S17-Fe17698	CP	%	95			70-130	Pass	
Aldrin	S17-Fe17698	CP	%	98			70-130	Pass	
b-BHC	S17-Fe17698	CP	%	102			70-130	Pass	
d-BHC	S17-Fe17698	CP	%	84			70-130	Pass	
Dieldrin	S17-Fe17698	CP	%	109			70-130	Pass	
Endosulfan I	S17-Fe17698	CP	%	108			70-130	Pass	
Endosulfan II	S17-Fe17698	CP	%	103			70-130	Pass	
Endosulfan sulphate	S17-Fe17698	CP	%	79			70-130	Pass	
Endrin	S17-Fe17698	CP	%	124			70-130	Pass	
Endrin aldehyde	S17-Fe17698	CP	%	80			70-130	Pass	
Endrin ketone	S17-Fe17698	CP	%	90			70-130	Pass	
g-BHC (Lindane)	S17-Fe17698	CP	%	87			70-130	Pass	
Heptachlor	S17-Fe17698	CP	%	121			70-130	Pass	
Heptachlor epoxide	S17-Fe17698	CP	%	119			70-130	Pass	
Hexachlorobenzene	S17-Fe17698	CP	%	87			70-130	Pass	
Methoxychlor	S17-Fe17698	CP	%	115			70-130	Pass	
Spike - % Recovery									
Alkalinity (speciated)				Result 1					
Bicarbonate Alkalinity (as CaCO3)	S17-Fe17698	CP	%	136			70-130	Fail	Q08

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Alkalinity (as CaCO3)	S17-Fe17698	CP	%	136			70-130	Fail	Q08
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S17-Fe17701	CP	%	97			70-130	Pass	
Magnesium	S17-Fe17701	CP	%	105			70-130	Pass	
Potassium	S17-Fe17701	CP	%	90			70-130	Pass	
Spike - % Recovery									
				Result 1					
Phosphate total (as P)	S17-Fe17703	CP	%	119			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S17-Fe17705	CP	%	82			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Fe17706	CP	%	96			75-125	Pass	
Cadmium	S17-Fe17706	CP	%	82			75-125	Pass	
Chromium	S17-Fe17706	CP	%	85			75-125	Pass	
Copper	S17-Fe17706	CP	%	76			75-125	Pass	
Lead	S17-Fe17706	CP	%	82			75-125	Pass	
Mercury	S17-Fe17706	CP	%	84			70-130	Pass	
Nickel	S17-Fe17706	CP	%	81			75-125	Pass	
Zinc	S17-Fe17706	CP	%	81			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Fe17707	CP	%	109			70-130	Pass	
Acenaphthylene	S17-Fe17707	CP	%	118			70-130	Pass	
Anthracene	S17-Fe17707	CP	%	129			70-130	Pass	
Benz(a)anthracene	S17-Fe17707	CP	%	99			70-130	Pass	
Benzo(a)pyrene	S17-Fe17707	CP	%	123			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Fe17707	CP	%	101			70-130	Pass	
Benzo(g.h.i)perylene	S17-Fe17707	CP	%	89			70-130	Pass	
Benzo(k)fluoranthene	S17-Fe17707	CP	%	98			70-130	Pass	
Chrysene	S17-Fe17707	CP	%	86			70-130	Pass	
Dibenz(a.h)anthracene	S17-Fe17707	CP	%	108			70-130	Pass	
Fluoranthene	S17-Fe17707	CP	%	110			70-130	Pass	
Fluorene	S17-Fe17707	CP	%	75			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Fe17707	CP	%	105			70-130	Pass	
Naphthalene	S17-Fe17707	CP	%	78			70-130	Pass	
Phenanthrene	S17-Fe17707	CP	%	115			70-130	Pass	
Pyrene	S17-Fe17707	CP	%	86			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Nitroglycerine (NG)	S17-Fe17697	CP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S17-Fe17697	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S17-Fe17697	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S17-Fe17697	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S17-Fe17697	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4.4'-DDD	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDE	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
4.4'-DDT	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
a-BHC	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Aldrin	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
b-BHC	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
d-BHC	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Dieldrin	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan I	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan II	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endosulfan sulphate	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin aldehyde	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Endrin ketone	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
g-BHC (Lindane)	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Heptachlor epoxide	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Hexachlorobenzene	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Methoxychlor	S17-Fe17697	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Toxaphene	S17-Fe17697	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos	S17-Fe17697	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos-methyl	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S17-Fe17697	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S17-Fe17697	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-O	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Phorate	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S17-Fe17697	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Tetrachlorvinphos	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S17-Fe17697	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Fe17697	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S17-Fe17697	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S17-Fe17697	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S17-Fe17697	CP	mg/L	1100	1100	<1	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S17-Fe17697	CP	mg/L	< 10	< 10	<1	30%	Pass	
Total Alkalinity (as CaCO3)	S17-Fe17697	CP	mg/L	1100	1100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Sulphate (as SO4)	S17-Fe17698	CP	mg/L	420	420	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S17-Fe17701	CP	mg/L	80	76	5.0	30%	Pass	
Magnesium	S17-Fe17701	CP	mg/L	550	520	5.0	30%	Pass	
Potassium	S17-Fe17701	CP	mg/L	6.6	6.7	1.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Phosphate total (as P)	S17-Fe17702	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	M17-Fe22217	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C10	M17-Fe22217	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
cis-1.2-Dichloroethene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	M17-Fe22217	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	M17-Fe22217	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
Naphthalene	M17-Fe22217	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
1.1-Dichloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2-Dichloropropane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromomethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon disulfide	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	M17-Fe22217	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	M17-Fe22217	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S17-Fe17705	CP	mg/L	0.35	0.30	18	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Acenaphthylene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Anthracene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benz(a)anthracene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(a)pyrene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(g.h.i)perylene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Benzo(k)fluoranthene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Chrysene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Dibenz(a.h)anthracene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluoranthene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Fluorene	S17-Fe17706	CP	mg/L	0.00002	0.00001	26	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Naphthalene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Phenanthrene	S17-Fe17706	CP	mg/L	0.00007	0.00006	9.7	30%	Pass	
Pyrene	S17-Fe17706	CP	mg/L	< 0.00001	< 0.00001	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Fe17706	CP	mg/L	0.008	0.008	2.0	30%	Pass	
Cadmium	S17-Fe17706	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S17-Fe17706	CP	mg/L	0.018	0.018	<1	30%	Pass	
Copper	S17-Fe17706	CP	mg/L	0.046	0.045	1.0	30%	Pass	
Lead	S17-Fe17706	CP	mg/L	0.018	0.019	6.0	30%	Pass	
Mercury	S17-Fe17706	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S17-Fe17706	CP	mg/L	0.026	0.025	2.0	30%	Pass	
Zinc	S17-Fe17706	CP	mg/L	0.083	0.087	5.0	30%	Pass	
Duplicate									
Alkalinity (speciated)				Result 1	Result 2	RPD			
Bicarbonate Alkalinity (as CaCO3)	S17-Fe17707	CP	mg/L	< 20	< 20	<1	30%	Pass	
Carbonate Alkalinity (as CaCO3)	S17-Fe17707	CP	mg/L	< 10	< 10	<1	30%	Pass	
Total Alkalinity (as CaCO3)	S17-Fe17707	CP	mg/L	< 20	< 20	<1	30%	Pass	

Comments

This report has been revised to amend PAH test results.

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

Authorised By

Nibha Vaidya	Analytical Services Manager
Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (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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Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Chris Bielby
Project name: CHESTER HILL
Project ID: 52401
COC number: Not provided
Turn around time: 5 Day
Date/Time received: Feb 17, 2017 2:57 PM
Eurofins | mgt reference: **534613**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 4.3 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

09522

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52401	LABORATORY BATCH NO.:
PROJECT NAME: Chester Hill	SAMPLERS: LL
DATE NEEDED BY: standard	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....cbielby.....@jbsg.com.au; (3) .....lliedecke.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B10[1]	VOCs	potassium	magnesium	Ammonia[2]	nitro-glycerin[2]	phosphate[2]	calc/sulfate[2]	carbonate[2]	TRH/BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW01	water	16/2/17		4x vials, 1L amber, 2 metals plastics (1 filtered / 1 total), 1 purple plastic, 1 500ml green plastic		X	X	X	X	X	X	X	X	X				#534613
MW02																		[1] PAH (low level)
MW03																		[2] part of 'Lab Suite 01'
MW04																		
MW05																		
MW06																		
MW07																		
MW08																		
MW09																		
QC01																		
RINSATE				(only 1 total metals bottle)														
TRIP SPIKE				2 vials											X			
TRIP BLANK				" "											X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 17/2/17 OF: JBS&G Lauren	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: 17/2 DATE: OF: Eurofin 2:57pm	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

09522

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52401	LABORATORY BATCH NO.:
PROJECT NAME: Chester Hill	SAMPLERS: LL
DATE NEEDED BY: standard	QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....cbielby.....@jbsg.com.au; (3) .....lliedecke.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	B10[1]	VOCs	potassium	magnesium	Ammonia[2]	nitro-glycerin[2]	phosphate[2]	calc/sulfate[2]	carbonate[2]	TRH/BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
MW01	water	16/2/17		4x vials, 1L amber, 2 metals plastics (1 filtered / 1 total), 1 purple plastic, 1 500ml green plastic		X	X	X	X	X	X	X	X	X				#534613
MW02																		[1] PAH (low level)
MW03																		[2] part of 'Lab Suite 01'
MW04																		
MW05																		
MW06																		
MW07																		
MW08																		
MW09																		
QC01																		
RINSATE				(only 1 total metals bottle)														
TRIP SPIKE				2 vials											X			
TRIP BLANK				" "											X			

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE: 17/2/17 OF: JBS&G Lauren	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: 17/2 DATE: OF: Eurofin 2:57pm	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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tel: +61 2 9910 6200

email: sydney@envirolab.com.au
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Envirolab Services Pty Ltd - Sydney | ABN 37 112 535 645

CERTIFICATE OF ANALYSIS 162071

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: C Bielby, L Luedecke

Sample log in details:

Your Reference:	**52401, Chester Hill**		
No. of samples:	1 Water		
Date samples received / completed instructions received	17/02/17	/	17/02/17

Analysis Details:

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

Report Details:

Date results requested by: / Issue Date:	24/02/17	/	28/02/17
Date of Preliminary Report:	Not Issued		

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

Results Approved By:

David Springer
General Manager

VOCs in water		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	21/02/2017
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1

VOCs in water		
Our Reference:	UNITS	162071-1
Your Reference	---------- -	QC01A
Date Sampled	----------	16/02/2017
Type of sample		Water
1,2,3-trichloropropane	µg/L	<1
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	98
Surrogate toluene-d8	%	96
Surrogate 4-BFB	%	99

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	162071-1
Your Reference	---------- -	QC01A
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	21/02/2017
TRHC$_6$ - C$_9$	µg/L	<10
TRHC$_6$ - C$_{10}$	µg/L	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	98
Surrogate toluene-d8	%	96
Surrogate 4-BFB	%	99

svTRH (C10-C40) in Water		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	20/02/2017
$TRHC_{10}$ - C_{14}	µg/L	<50
$TRHC_{15}$ - C_{28}	µg/L	<100
$TRHC_{29}$ - C_{36}	µg/L	<100
$TRH>C_{10}$ - C_{16}	µg/L	<50
$TRH>C_{10}$ - C_{16} less Naphthalene (F2)	µg/L	<50
$TRH>C_{16}$ - C_{34}	µg/L	<100
$TRH>C_{34}$ - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	80

PAHs in Water - Low Level		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	21/02/2017
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	90

OCP in water		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	21/02/2017
HCB	µg/L	<0.2
alpha-BHC	µg/L	<0.2
gamma-BHC	µg/L	<0.2
beta-BHC	µg/L	<0.2
Heptachlor	µg/L	<0.2
delta-BHC	µg/L	<0.2
Aldrin	µg/L	<0.2
Heptachlor Epoxide	µg/L	<0.2
gamma-Chlordane	µg/L	<0.2
alpha-Chlordane	µg/L	<0.2
Endosulfan I	µg/L	<0.2
pp-DDE	µg/L	<0.2
Dieldrin	µg/L	<0.2
Endrin	µg/L	<0.2
pp-DDD	µg/L	<0.2
Endosulfan II	µg/L	<0.2
pp-DDT	µg/L	<0.2
Endrin Aldehyde	µg/L	<0.2
Endosulfan Sulphate	µg/L	<0.2
Methoxychlor	µg/L	<0.2
Surrogate TCMX	%	120

OP Pesticides in water		
Our Reference:	UNITS	162071-1
Your Reference	---------- -	QC01A
Date Sampled	----------	16/02/2017
Type of sample		Water
Date extracted	-	20/02/2017
Date analysed	-	21/02/2017
Azinphos-methyl (Guthion)	µg/L	<0.2
Bromophos ethyl	µg/L	<0.2
Chlorpyriphos	µg/L	<0.2
Chlorpyriphos-methyl	µg/L	<0.2
Diazinon	µg/L	<0.2
Dichlorovos	µg/L	<0.2
Dimethoate	µg/L	<0.2
Ethion	µg/L	<0.2
Fenitrothion	µg/L	<0.2
Malathion	µg/L	<0.2
Parathion	µg/L	<0.2
Ronnel	µg/L	<0.2
Surrogate TCMX	%	120

HM in water - dissolved		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date prepared	-	20/02/2017
Date analysed	-	20/02/2017
Arsenic-Dissolved	µg/L	6
Cadmium-Dissolved	µg/L	0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	<1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	<1
Zinc-Dissolved	µg/L	3

Miscellaneous Inorganics		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date prepared	-	17/02/2017
Date analysed	-	17/02/2017
Ammonia as N in water	mg/L	0.48
Phosphate as P in water	mg/L	0.076
Sulphate, SO4	mg/L	440
Carbonate Alkalinity as $CaCO_3$	mg/L	<5

Cations in water Dissolved		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date digested	-	20/02/2017
Date analysed	-	20/02/2017
Potassium - Dissolved	mg/L	19
Magnesium - Dissolved	mg/L	430
Calcium - Dissolved	mg/L	90

Explosives in Water		
Our Reference:	UNITS	162071-1
Your Reference	----------	QC01A
	-	
Date Sampled	----------	16/02/2017
Type of sample		Water
Date Extracted	-	21/02/2017
Date analysed	-	21/02/2017
Nitroglycerine	µg/L	<200
Surrogate (o-Dinitrobenzene)	%	75

Method ID	Methodology Summary
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Org-005	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Org-008	Soil samples are extracted with dichloromethane/acetone and waters with dichloromethane and analysed by GC with dual ECD's.
Metals-022	Determination of various metals by ICP-MS.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.
Inorg-060	Phosphate determined colourimetrically based on EPA365.1 and APHA latest edition 4500 P E. Soils are analysed following a water extraction.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyer.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Metals-020	Determination of various metals by ICP-AES.
Ext-011	Subcontracted to ALS.

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	162071-1	20/02/2017 || 20/02/2017	LCS-W1	20/02/2017
Date analysed	-			21/02/2017	162071-1	21/02/2017 || 21/02/2017	LCS-W1	21/02/2017
Dichlorodifluoromethane	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	162071-1	<10 || <10	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,1-dichloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	86%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	93%
2,2-dichloropropane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	97%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	102%
1,1-dichloropropene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	92%
Bromodichloromethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	98%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	103%
1,2-dibromoethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	162071-1	<1 || <1	LCS-W1	95%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	162071-1	<2 || <2	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
1,2,3-trichloropropane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
4-isopropyl toluene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	98	162071-1	98 || 96 || RPD: 2	LCS-W1	109%
Surrogate toluene-d8	%		Org-013	98	162071-1	96 || 96 || RPD: 0	LCS-W1	111%
Surrogate 4-BFB	%		Org-013	102	162071-1	99 || 101 || RPD: 2	LCS-W1	102%

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	162071-1	20/02/2017 || 20/02/2017	LCS-W1	20/02/2017
Date analysed	-			21/02/2017	162071-1	21/02/2017 || 21/02/2017	LCS-W1	21/02/2017
TRHC$_6$ - C$_9$	µg/L	10	Org-016	<10	162071-1	<10 || <10	LCS-W1	87%
TRHC$_6$ - C$_{10}$	µg/L	10	Org-016	<10	162071-1	<10 || <10	LCS-W1	87%
Benzene	µg/L	1	Org-016	<1	162071-1	<1 || <1	LCS-W1	87%
Toluene	µg/L	1	Org-016	<1	162071-1	<1 || <1	LCS-W1	91%
Ethylbenzene	µg/L	1	Org-016	<1	162071-1	<1 || <1	LCS-W1	84%
m+p-xylene	µg/L	2	Org-016	<2	162071-1	<2 || <2	LCS-W1	86%
o-xylene	µg/L	1	Org-016	<1	162071-1	<1 || <1	LCS-W1	84%
Naphthalene	µg/L	1	Org-013	<1	162071-1	<1 || <1	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	98	162071-1	98 || 96 || RPD: 2	LCS-W1	109%
Surrogate toluene-d8	%		Org-016	98	162071-1	96 || 96 || RPD: 0	LCS-W1	111%
Surrogate 4-BFB	%		Org-016	102	162071-1	99 || 101 || RPD: 2	LCS-W1	102%

QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	[NT]	[NT]	LCS-W2	20/02/2017
Date analysed	-			20/02/2017	[NT]	[NT]	LCS-W2	20/02/2017
TRHC$_{10}$ - C$_{14}$	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	114%
TRHC$_{15}$ - C$_{28}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	108%
TRHC$_{29}$ - C$_{36}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	84%
TRH>C$_{10}$ - C$_{16}$	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	114%
TRH>C$_{16}$ - C$_{34}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	108%
TRH>C$_{34}$ - C$_{40}$	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	84%
Surrogate o-Terphenyl	%		Org-003	85	[NT]	[NT]	LCS-W2	95%

QUALITY CONTROL PAHs in Water - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base || Duplicate || %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	[NT]	[NT]	LCS-W3	20/02/2017
Date analysed	-			21/02/2017	[NT]	[NT]	LCS-W3	21/02/2017
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	LCS-W3	113%
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	122%
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	115%
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	129%
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	126%

QUALITY CONTROL PAHs in Water - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	124%
Benzo(b,j +k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W3	125%
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	70	[NT]	[NT]	LCS-W3	96%
QUALITY CONTROL OCP in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	[NT]	[NT]	LCS-W1	20/02/2017
Date analysed	-			21/02/2017	[NT]	[NT]	LCS-W1	21/02/2017
HCB	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	99%
gamma-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
beta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	108%
Heptachlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	102%
delta-BHC	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	101%
Heptachlor Epoxide	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	105%
gamma-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
alpha-Chlordane	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDE	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	111%
Dieldrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	115%
Endrin	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	106%
pp-DDD	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	119%
Endosulfan II	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
pp-DDT	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	LCS-W1	101%
Methoxychlor	µg/L	0.2	Org-005	<0.2	[NT]	[NT]	[NR]	[NR]
Surrogate TCMX	%		Org-005	124	[NT]	[NT]	LCS-W1	120%

QUALITY CONTROL OP Pesticides in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			20/02/2017	[NT]	[NT]	LCS-W1	20/02/2017
Date analysed	-			21/02/2017	[NT]	[NT]	LCS-W1	21/02/2017
Azinphos-methyl (Guthion)	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Bromophos ethyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Chlorpyriphos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	83%
Chlorpyriphos-methyl	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Diazinon	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Dichlorovos	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	84%
Dimethoate	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	[NR]	[NR]
Ethion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	93%
Fenitrothion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	102%
Malathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	99%
Parathion	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	94%
Ronnel	µg/L	0.2	Org-008	<0.2	[NT]	[NT]	LCS-W1	77%
Surrogate TCMX	%		Org-008	124	[NT]	[NT]	LCS-W1	103%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			20/02/2017	[NT]	[NT]	LCS-W2	20/02/2017
Date analysed	-			20/02/2017	[NT]	[NT]	LCS-W2	20/02/2017
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	103%
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	LCS-W2	103%
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	101%
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	97%
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	98%
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	LCS-W2	96%
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	98%
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W2	96%

QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			17/02/2017	[NT]	[NT]	LCS-W1	17/02/2017
Date analysed	-			17/02/2017	[NT]	[NT]	LCS-W1	17/02/2017
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	[NT]	[NT]	LCS-W1	99%
Phosphate as P in water	mg/L	0.005	Inorg-060	<0.005	[NT]	[NT]	LCS-W1	108%
Sulphate, SO4	mg/L	1	Inorg-081	<1	[NT]	[NT]	LCS-W1	108%
Carbonate Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	LCS-W1	105%

QUALITY CONTROL Cations in water Dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date digested	-			20/02/2017	[NT]	[NT]	LCS-W1	20/02/2017
Date analysed	-			20/02/2017	[NT]	[NT]	LCS-W1	20/02/2017
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W1	96%
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W1	98%
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W1	99%

QUALITY CONTROL Explosives in Water	UNITS	PQL	METHOD	Blank
Date Extracted	-			[NT]
Date analysed	-			[NT]
Nitroglycerine	µg/L	200	Ext-011	<200
Surrogate (o-Dinitrobenzene)	%		Ext-011	[NT]

Report Comments:

Explosives analysed by ALS, report no ES1703962.

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

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

09523

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: 52401
PROJECT NAME: Chester Hill
DATE NEEDED BY: Standard

LABORATORY BATCH NO.:
SAMPLERS: LL
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) cbielby@jbsg.com.au; (3) lwoodecke@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

	SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	5B1	VOCs	potassium	magnesium	Ammonia	nitro-glycerine	phosphate	calcium sulfate	carbonates	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
1	QC01A	water	16/2/17		4 vials, 1L amber, 2 metals (1 filtered, 1 total), 1 purple plastic, 1 500mL green plastic		X	X	X	X	X	X	X	X	X			1 PAH (low level)

ENVIROLAB GROUP

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

Job No: 162071
Date Received: 17.2
Time Received: 11:00
Received by: JAC
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: James	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G Lauren 17/2/17	TRANSPORT CO.	DATE: 17.2	COOLER TEMP ..... deg C
		OF: ELS	
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **533646-W**
Project name CHESTER HILL GME
Project ID 52401
Received Date Feb 09, 2017

Client Sample ID			**17**	**15**	**7**	**R20 TSPIKE**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe09944**	**S17-Fe09945**	**S17-Fe09946**	**S17-Fe09947**
Date Sampled			**Feb 08, 2017**	**Feb 08, 2017**	**Feb 08, 2017**	**Feb 08, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	0.16	0.44	0.13	-
TRH C15-C28	0.1	mg/L	0.1	1.5	0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	0.8	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	0.26	2.74	0.23	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	100
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	100
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	100
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	110
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	110
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	110
4-Bromofluorobenzene (surr.)	1	%	99	99	98	101
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	0.012	0.028	0.012	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	0.001	0.003	0.001	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			17	15	7	[R20]TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe09944	S17-Fe09945	S17-Fe09946	S17-Fe09947
Date Sampled			Feb 08, 2017	Feb 08, 2017	Feb 08, 2017	Feb 08, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	100	102	99	-
4-Bromofluorobenzene (surr.)	1	%	99	99	98	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.06	0.43	0.06	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	0.06	0.43	0.06	-
TRH >C16-C34	0.1	mg/L	0.2	2.1	0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	0.3	< 0.1	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.3-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			17	15	7	[R20]TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe09944	S17-Fe09945	S17-Fe09946	S17-Fe09947
Date Sampled			Feb 08, 2017	Feb 08, 2017	Feb 08, 2017	Feb 08, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
1.2.3.4-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.5-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.4.5-Tetrachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3.5-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chloronaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Methylnaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Nitroaniline	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Picoline	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.3.4.6-Tetrachlorophenol	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.6-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
3-Methylcholanthrene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
3.3'-Dichlorobenzidine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Aminobiphenyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Bromophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Chlorophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4.4'-DDD	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDE	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDT	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
7.12-Dimethylbenz(a)anthracene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
a-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aniline	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			17	15	7	[R20]TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe09944	S17-Fe09945	S17-Fe09946	S17-Fe09947
Date Sampled			Feb 08, 2017	Feb 08, 2017	Feb 08, 2017	Feb 08, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Benzyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bis(2-chloroethoxy)methane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-chloroisopropyl)ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-ethylhexyl)phthalate	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Butyl benzyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-butyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-octyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.j)acridine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenzofuran	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dieldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethylaminoazobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diphenylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan I	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan II	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan sulphate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin aldehyde	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin ketone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
g-BHC (Lindane)	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor epoxide	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobutadiene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorocyclopentadiene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
Hexachloroethane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
N-Nitrosodibutylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodipropylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosopiperidine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachloronitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Pronamide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol-d6 (surr.)	1	%	40	46	38	-
Nitrobenzene-d5 (surr.)	1	%	86	98	85	-

Client Sample ID			17	15	7	[R20]TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe09944	S17-Fe09945	S17-Fe09946	S17-Fe09947
Date Sampled			Feb 08, 2017	Feb 08, 2017	Feb 08, 2017	Feb 08, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
2-Fluorobiphenyl (surr.)	1	%	84	94	80	-
2.4.6-Tribromophenol (surr.)	1	%	n/a	n/a	n/a	-
Conductivity (at 25°C)	1	uS/cm	690	760	850	-
pH	0.1	pH Units	7.8	7.4	8.2	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	0.001	< 0.001	0.003	-
Copper (filtered)	0.001	mg/L	0.004	0.002	0.012	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	0.007	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	0.002	0.002	0.003	-
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	0.035	-

Client Sample ID			TBLANK	17	15	7
Sample Matrix			Water	Water (Trace)	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Fe09948	S17-Fe09961	S17-Fe09962	S17-Fe09963
Date Sampled			Feb 08, 2017	Feb 08, 2017	Feb 08, 2017	Feb 08, 2017
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	%	95	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Anthracene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Benz(a)anthracene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Benzo(a)pyrene	0.00001	mg/L	-	< 0.00001	0.00010	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	-	0.00010	0.00010	< 0.00005
Benzo(g.h.i)perylene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Benzo(k)fluoranthene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Chrysene	0.00005	mg/L	-	0.00010	0.00010	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	-	0.00010	0.00020	0.00010
Fluorene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Naphthalene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Phenanthrene	0.00005	mg/L	-	0.00010	0.00030	0.00010
Pyrene	0.00005	mg/L	-	0.00010	0.00020	0.00010
Total PAH*	0.00005	mg/L	-	0.0005	0.0014	0.0003
2-Fluorobiphenyl (surr.)	1	%	-	62	77	83
p-Terphenyl-d14 (surr.)	1	%	-	74	81	96

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	Sydney	Feb 14, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 10, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 14, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Feb 10, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Feb 10, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 14, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Semivolatile Organics	Sydney	Feb 14, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Sydney	Feb 14, 2017	28 Day
- Method: LTM-INO-4030			
pH	Sydney	Feb 14, 2017	1 Day
- Method: LTM-GEN-7090 pH in water by ISE			
Metals M8 filtered	Sydney	Feb 10, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

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Site # 18217

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Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: CHESTER HILL GME
Project ID: 52401

Order No.:
Report #: 533646
Phone: 02 8245 0300
Fax:

Received: Feb 9, 2017 5:20 PM
Due: Feb 16, 2017
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	BTEX	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 18217													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	17	Feb 08, 2017		Water	S17-Fe09944	X	X		X	X	X	X	X
2	15	Feb 08, 2017		Water	S17-Fe09945	X	X		X	X	X	X	X
3	7	Feb 08, 2017		Water	S17-Fe09946	X	X		X	X	X	X	X
4	TSPIKE	Feb 08, 2017		Water	S17-Fe09947					X			
5	TBLANK	Feb 08, 2017		Water	S17-Fe09948					X			
6	17	Feb 08, 2017		Water (Trace)	S17-Fe09961			X					
7	15	Feb 08, 2017		Water (Trace)	S17-Fe09962			X					
8	7	Feb 08, 2017		Water (Trace)	S17-Fe09963			X					
Test Counts						3	3	3	3	5	3	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.002			0.002	Pass	
1.2-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
2-Chloronaphthalene	mg/L	< 0.002			0.002	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.002			0.002	Pass	
2-Nitroaniline	mg/L	< 0.004			0.004	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.001			0.001	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.002			0.002	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.001			0.001	Pass	
4-Aminobiphenyl	mg/L	< 0.002			0.002	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.002			0.002	Pass	
4.4'-DDE	mg/L	< 0.002			0.002	Pass	
4.4'-DDT	mg/L	< 0.004			0.004	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.002			0.002	Pass	
Acetophenone	mg/L	< 0.002			0.002	Pass	
Aldrin	mg/L	< 0.002			0.002	Pass	
Aniline	mg/L	< 0.002			0.002	Pass	
b-BHC	mg/L	< 0.002			0.002	Pass	
Benzyl chloride	mg/L	< 0.001			0.001	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.002			0.002	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.002			0.002	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.02			0.02	Pass	
Butyl benzyl phthalate	mg/L	< 0.002			0.002	Pass	
d-BHC	mg/L	< 0.002			0.002	Pass	
Di-n-butyl phthalate	mg/L	< 0.002			0.002	Pass	
Di-n-octyl phthalate	mg/L	< 0.002			0.002	Pass	
Dibenz(a.j)acridine	mg/L	< 0.001			0.001	Pass	
Dibenzofuran	mg/L	< 0.002			0.002	Pass	
Dieldrin	mg/L	< 0.002			0.002	Pass	
Diethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethylaminoazobenzene	mg/L	< 0.002			0.002	Pass	
Diphenylamine	mg/L	< 0.002			0.002	Pass	
Endosulfan I	mg/L	< 0.002			0.002	Pass	
Endosulfan II	mg/L	< 0.002			0.002	Pass	
Endosulfan sulphate	mg/L	< 0.002			0.002	Pass	
Endrin	mg/L	< 0.002			0.002	Pass	
Endrin aldehyde	mg/L	< 0.002			0.002	Pass	
Endrin ketone	mg/L	< 0.002			0.002	Pass	
g-BHC (Lindane)	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.002			0.002	Pass	
Heptachlor epoxide	mg/L	< 0.002			0.002	Pass	
Hexachlorobenzene	mg/L	< 0.002			0.002	Pass	
Hexachlorobutadiene	mg/L	< 0.002			0.002	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.004			0.004	Pass	
Hexachloroethane	mg/L	< 0.002			0.002	Pass	
Methoxychlor	mg/L	< 0.001			0.001	Pass	
N-Nitrosodibutylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosodipropylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosopiperidine	mg/L	< 0.002			0.002	Pass	
Nitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorobenzene	mg/L	< 0.002			0.002	Pass	
Pentachloronitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.001			0.001	Pass	
Method Blank							
Conductivity (at 25°C)	uS/cm	< 1			1	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							
TRH C6-C9	%	106			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	102			70-130	Pass	
Toluene	%	101			70-130	Pass	
Ethylbenzene	%	100			70-130	Pass	
m&p-Xylenes	%	101			70-130	Pass	
o-Xylene	%	101			70-130	Pass	
Xylenes - Total	%	101			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	103			70-130	Pass	
1.1-Dichloroethene	%	104			70-130	Pass	
1.1.1-Trichloroethane	%	102			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	99			70-130	Pass	
1.1.2-Trichloroethane	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	99			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	103			70-130	Pass	
1.2-Dichloroethane	%	102			70-130	Pass	
1.2-Dichloropropane	%	101			70-130	Pass	
1.2.3-Trichloropropane	%	101			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2.4-Trimethylbenzene	%	101			70-130	Pass	
1.3-Dichlorobenzene	%	104			70-130	Pass	
1.3-Dichloropropane	%	101			70-130	Pass	
1.3.5-Trimethylbenzene	%	102			70-130	Pass	
1.4-Dichlorobenzene	%	103			70-130	Pass	
2-Butanone (MEK)	%	94			70-130	Pass	
2-Propanone (Acetone)	%	104			70-130	Pass	
4-Chlorotoluene	%	104			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	94			70-130	Pass	
Allyl chloride	%	105			70-130	Pass	
Bromobenzene	%	103			70-130	Pass	
Bromochloromethane	%	107			70-130	Pass	
Bromodichloromethane	%	100			70-130	Pass	
Bromoform	%	97			70-130	Pass	
Bromomethane	%	95			70-130	Pass	
Carbon disulfide	%	100			70-130	Pass	
Carbon Tetrachloride	%	101			70-130	Pass	
Chlorobenzene	%	101			70-130	Pass	
Chloroethane	%	105			70-130	Pass	
Chloroform	%	102			70-130	Pass	
Chloromethane	%	100			70-130	Pass	
cis-1.2-Dichloroethene	%	102			70-130	Pass	
cis-1.3-Dichloropropene	%	95			70-130	Pass	
Dibromochloromethane	%	99			70-130	Pass	
Dibromomethane	%	102			70-130	Pass	
Dichlorodifluoromethane	%	101			70-130	Pass	
Iodomethane	%	90			70-130	Pass	
Isopropyl benzene (Cumene)	%	100			70-130	Pass	
Methylene Chloride	%	106			70-130	Pass	
Styrene	%	99			70-130	Pass	
Tetrachloroethene	%	100			70-130	Pass	
trans-1.2-Dichloroethene	%	101			70-130	Pass	
trans-1.3-Dichloropropene	%	96			70-130	Pass	
Trichloroethene	%	101			70-130	Pass	
Trichlorofluoromethane	%	104			70-130	Pass	
Vinyl chloride	%	104			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	99			70-130	Pass	
TRH C6-C10	%	99			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	83			70-130	Pass	
Anthracene	%	99			70-130	Pass	
Benz(a)anthracene	%	96			70-130	Pass	
Benzo(a)pyrene	%	85			70-130	Pass	
Benzo(b&j)fluoranthene	%	84			70-130	Pass	
Benzo(g.h.i)perylene	%	83			70-130	Pass	
Benzo(k)fluoranthene	%	90			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	90			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Indeno(1.2.3-cd)pyrene	%	94			70-130	Pass	
Naphthalene	%	96			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	92			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	75			70-130	Pass	
1.4-Dichlorobenzene	%	75			70-130	Pass	
2-Chlorophenol	%	88			30-130	Pass	
2.4-Dinitrotoluene	%	100			70-130	Pass	
4-Chloro-3-methylphenol	%	88			30-130	Pass	
N-Nitrosodipropylamine	%	75			70-130	Pass	
Pentachlorophenol	%	88			30-130	Pass	
Phenol	%	38			30-130	Pass	
LCS - % Recovery							
Conductivity (at 25°C)	%	100			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic (filtered)	%	104			70-130	Pass	
Cadmium (filtered)	%	105			70-130	Pass	
Chromium (filtered)	%	110			70-130	Pass	
Copper (filtered)	%	111			70-130	Pass	
Lead (filtered)	%	109			70-130	Pass	
Mercury (filtered)	%	99			70-130	Pass	
Nickel (filtered)	%	106			70-130	Pass	
Zinc (filtered)	%	123			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	S17-Fe09249	NCP	%	98			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Fe11435	NCP	%	103			70-130	Pass	
Toluene	S17-Fe11435	NCP	%	100			70-130	Pass	
Ethylbenzene	S17-Fe11435	NCP	%	100			70-130	Pass	
m&p-Xylenes	S17-Fe11435	NCP	%	100			70-130	Pass	
o-Xylene	S17-Fe11435	NCP	%	101			70-130	Pass	
Xylenes - Total	S17-Fe11435	NCP	%	100			70-130	Pass	
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S17-Fe11435	NCP	%	104			70-130	Pass	
1.1-Dichloroethene	S17-Fe11435	NCP	%	104			70-130	Pass	
1.1.1-Trichloroethane	S17-Fe11435	NCP	%	105			70-130	Pass	
1.1.1.2-Tetrachloroethane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.1.2-Trichloroethane	S17-Fe11435	NCP	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.2-Dibromoethane	S17-Fe11435	NCP	%	100			70-130	Pass	
1.2-Dichlorobenzene	S17-Fe11435	NCP	%	99			70-130	Pass	
1.2-Dichloroethane	S17-Fe11435	NCP	%	106			70-130	Pass	
1.2-Dichloropropane	S17-Fe11435	NCP	%	102			70-130	Pass	
1.2.3-Trichloropropane	S17-Fe11435	NCP	%	100			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.2.4-Trimethylbenzene	S17-Fe11435	NCP	%	94			70-130	Pass	
1.3-Dichlorobenzene	S17-Fe11435	NCP	%	98			70-130	Pass	
1.3-Dichloropropane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.3.5-Trimethylbenzene	S17-Fe11435	NCP	%	95			70-130	Pass	
1.4-Dichlorobenzene	S17-Fe11435	NCP	%	98			70-130	Pass	
2-Butanone (MEK)	S17-Fe11435	NCP	%	92			70-130	Pass	
2-Propanone (Acetone)	S17-Fe11435	NCP	%	128			70-130	Pass	
4-Chlorotoluene	S17-Fe11435	NCP	%	100			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Fe11435	NCP	%	105			70-130	Pass	
Allyl chloride	S17-Fe11435	NCP	%	105			70-130	Pass	
Bromobenzene	S17-Fe11435	NCP	%	100			70-130	Pass	
Bromochloromethane	S17-Fe11435	NCP	%	110			70-130	Pass	
Bromodichloromethane	S17-Fe11435	NCP	%	104			70-130	Pass	
Bromoform	S17-Fe11435	NCP	%	96			70-130	Pass	
Bromomethane	S17-Fe11435	NCP	%	95			70-130	Pass	
Carbon disulfide	S17-Fe11435	NCP	%	93			70-130	Pass	
Carbon Tetrachloride	S17-Fe11435	NCP	%	104			70-130	Pass	
Chlorobenzene	S17-Fe11435	NCP	%	102			70-130	Pass	
Chloroethane	S17-Fe11435	NCP	%	106			70-130	Pass	
Chloroform	S17-Fe11435	NCP	%	104			70-130	Pass	
Chloromethane	S17-Fe11435	NCP	%	104			70-130	Pass	
cis-1.2-Dichloroethene	S17-Fe11435	NCP	%	102			70-130	Pass	
cis-1.3-Dichloropropene	S17-Fe11435	NCP	%	97			70-130	Pass	
Dibromochloromethane	S17-Fe11435	NCP	%	101			70-130	Pass	
Dibromomethane	S17-Fe11435	NCP	%	105			70-130	Pass	
Dichlorodifluoromethane	S17-Fe11435	NCP	%	89			70-130	Pass	
Iodomethane	S17-Fe11435	NCP	%	100			70-130	Pass	
Isopropyl benzene (Cumene)	S17-Fe11435	NCP	%	98			70-130	Pass	
Methylene Chloride	S17-Fe11435	NCP	%	114			70-130	Pass	
Styrene	S17-Fe11435	NCP	%	99			70-130	Pass	
Tetrachloroethene	S17-Fe11435	NCP	%	98			70-130	Pass	
trans-1.2-Dichloroethene	S17-Fe11435	NCP	%	101			70-130	Pass	
trans-1.3-Dichloropropene	S17-Fe11435	NCP	%	98			70-130	Pass	
Trichloroethene	S17-Fe11435	NCP	%	101			70-130	Pass	
Trichlorofluoromethane	S17-Fe11435	NCP	%	103			70-130	Pass	
Vinyl chloride	S17-Fe11435	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Fe11435	NCP	%	93			70-130	Pass	
TRH C6-C10	S17-Fe09249	NCP	%	90			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	S17-Fe09248	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Fe11436	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Fe11436	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	

Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S17-Fe11436	NCP	mg/L	0.002	0.002	4.0	30%	Pass	
Bromomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon disulfide	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	S17-Fe11436	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.2-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Fe11436	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Fe09248	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	S17-Fe10941	NCP	uS/cm	1100	1100	<1	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic (filtered)	M17-Fe12528	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium (filtered)	M17-Fe12528	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium (filtered)	M17-Fe12528	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper (filtered)	M17-Fe12528	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead (filtered)	M17-Fe12528	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury (filtered)	M17-Fe12528	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel (filtered)	M17-Fe12528	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc (filtered)	M17-Fe12528	NCP	mg/L	0.21	0.21	1.0	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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)



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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Sample Receipt Advice

Company name:	**JBS & G Australia (NSW & WA) P/L**
Contact name:	Chris Bielby
Project name:	CHESTER HILL GME
Project ID:	52401
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Feb 9, 2017 5:20 PM
Eurofins | mgt reference:	**533646**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 3.1 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

02131

CHAIN OF CUSTODY

PROJECT NO.: 52401	LABORATORY BATCH NO.:
PROJECT NAME: [redacted] CHESTER HILL GME	SAMPLERS: SM
SEND REPORT TO: Chelsey SEND INVOICE TO: INVOICES	PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: SMcVeigh
DATE NEEDED BY: STANDARD	QC LEVEL: NEPM (2013)
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:	

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	HMETALS	VOC	SVOC	Ec/pH	PAH (Low level)	BTEX	NOTES:
17	WATER	8.2.17		ICE+3xHCL VIAL, 1xAMBER, 1xMETALS, 1xJAR		X	X	X	X	X	X		
15	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓		
7	↓	↓	↓	↓		↓	↓	↓	↓	↓	↓		
TSPIKE/BLANK	WATER	↓	↓	VIAL								X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: SMARSH DATE: 09/02/2017 OF: JBS&G	CONSIGNMENT NOTE NO. TRANSPORT CO.	NAME: LAW DATE: 09/02 5:20pm OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C
NAME: DATE: OF:	CONSIGNMENT NOTE NO. TRANSPORT CO	NAME: DATE: OF:	COOLER SEAL – Yes..... No ..... Intact ..... Broken ..... COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

#533646

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
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: **Simon McVeigh**

Report **534036-W**
Project name CHESTER HILL SURFACE ROUND 2
Project ID 52401
Received Date Feb 14, 2017

Client Sample ID			**15**	**17**	**7**	**TS**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe12671**	**S17-Fe12672**	**S17-Fe12673**	**S17-Fe12674**
Date Sampled			**Feb 14, 2017**	**Feb 14, 2017**	**Feb 14, 2017**	**Feb 14, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	1.3	0.46	0.44	-
TRH C15-C28	0.1	mg/L	7.7	1.1	1.5	-
TRH C29-C36	0.1	mg/L	4.6	0.7	0.5	-
TRH C10-36 (Total)	0.1	mg/L	13.6	2.26	2.44	-
BTEX						
Comments						R20
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	95
Toluene	0.001	mg/L	0.001	< 0.001	< 0.001	95
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	93
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	96
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	97
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	97
4-Bromofluorobenzene (surr.)	1	%	95	93	95	104
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	0.006	< 0.001	0.005	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	0.018	< 0.001	0.010	-

Client Sample ID			15	17	7	TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe12671	S17-Fe12672	S17-Fe12673	S17-Fe12674
Date Sampled			Feb 14, 2017	Feb 14, 2017	Feb 14, 2017	Feb 14, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	102	107	102	-
4-Bromofluorobenzene (surr.)	1	%	95	93	95	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	1.9	0.22	0.27	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	1.9	0.22	0.27	-
TRH >C16-C34	0.1	mg/L	11	1.6	1.9	-
TRH >C34-C40	0.1	mg/L	1.8	0.2	0.1	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			15	17	7	TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe12671	S17-Fe12672	S17-Fe12673	S17-Fe12674
Date Sampled			Feb 14, 2017	Feb 14, 2017	Feb 14, 2017	Feb 14, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
1.2.3-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.4-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.5-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.4.5-Tetrachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3.5-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chloronaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Methylnaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Nitroaniline	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Picoline	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.3.4.6-Tetrachlorophenol	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.6-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
3-Methylcholanthrene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
3.3'-Dichlorobenzidine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Aminobiphenyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Bromophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Chlorophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Nitrophenol	0.001	mg/L	< 0.005	< 0.005	< 0.005	-
4.4'-DDD	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDE	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDT	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
7.12-Dimethylbenz(a)anthracene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
a-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aniline	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			15	17	7	TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe12671	S17-Fe12672	S17-Fe12673	S17-Fe12674
Date Sampled			Feb 14, 2017	Feb 14, 2017	Feb 14, 2017	Feb 14, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bis(2-chloroethoxy)methane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-chloroisopropyl)ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-ethylhexyl)phthalate	0.02	mg/L	0.02	< 0.02	< 0.02	-
Butyl benzyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-butyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-octyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.j)acridine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenzofuran	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dieldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethylaminoazobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diphenylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan I	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan II	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan sulphate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin aldehyde	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin ketone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
g-BHC (Lindane)	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor epoxide	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobutadiene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorocyclopentadiene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
Hexachloroethane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
N-Nitrosodibutylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodipropylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosopiperidine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachloronitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Pronamide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol-d6 (surr.)	1	%	59	44	46	-

Client Sample ID			15	17	7	TS
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe12671	S17-Fe12672	S17-Fe12673	S17-Fe12674
Date Sampled			Feb 14, 2017	Feb 14, 2017	Feb 14, 2017	Feb 14, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Nitrobenzene-d5 (surr.)	1	%	98	83	85	-
2-Fluorobiphenyl (surr.)	1	%	90	83	83	-
Conductivity (at 25°C)	1	uS/cm	1100	1100	2600	-
pH	0.1	pH Units	7.1	7.5	7.3	-
Heavy Metals						
Arsenic (filtered)	0.001	mg/L	0.003	0.002	0.004	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Copper (filtered)	0.001	mg/L	0.005	0.008	< 0.001	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel (filtered)	0.001	mg/L	0.004	0.003	0.004	-
Zinc (filtered)	0.005	mg/L	0.008	0.009	< 0.005	-

Client Sample ID			TB	15	17	7
Sample Matrix			Water	Water (Trace)	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Fe12675	S17-Fe15875	S17-Fe15876	S17-Fe15877
Date Sampled			Feb 14, 2017	Feb 14, 2017	Feb 14, 2017	Feb 14, 2017
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	%	94	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Anthracene	0.00005	mg/L	-	0.00010	0.00010	0.0013
Benz(a)anthracene	0.00005	mg/L	-	0.00020	0.00020	0.00050
Benzo(a)pyrene	0.00001	mg/L	-	0.00010	0.00010	0.00040
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	-	0.00020	0.00020	0.00030
Benzo(g.h.i)perylene	0.00005	mg/L	-	0.00010	0.00010	0.00010
Benzo(k)fluoranthene	0.00005	mg/L	-	0.00010	0.00010	0.00010
Chrysene	0.00005	mg/L	-	0.00020	0.00020	0.00020
Dibenz(a.h)anthracene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	-	0.00030	0.00020	0.00040
Fluorene	0.00005	mg/L	-	< 0.00005	< 0.00005	0.00040
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	-	0.00010	0.00010	0.00020
Naphthalene	0.00005	mg/L	-	< 0.00005	0.00010	0.00010
Phenanthrene	0.00005	mg/L	-	0.00060	0.00020	0.0043
Pyrene	0.00005	mg/L	-	0.00030	0.00030	0.00070
Total PAH*	0.00005	mg/L	-	0.0023	0.0019	0.009
2-Fluorobiphenyl (surr.)	1	%	-	72	65	59
p-Terphenyl-d14 (surr.)	1	%	-	104	72	64

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	Sydney	Feb 15, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 14, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 15, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Feb 14, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Feb 14, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 16, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Semivolatile Organics	Sydney	Feb 15, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Sydney	Feb 16, 2017	28 Day
- Method: LTM-INO-4030			
pH	Sydney	Feb 16, 2017	1 Day
- Method: LTM-GEN-7090 pH in water by ISE			
Metals M8 filtered	Sydney	Feb 14, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			

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Address: Level 1, 50 Margaret St
Sydney
NSW 2000

Project Name: CHESTER HILL SURFACE ROUND 2
Project ID: 52401

Order No.:
Report #: 534036
Phone: 02 8245 0300
Fax:

Received: Feb 14, 2017 10:57 AM
Due: Feb 21, 2017
Priority: 5 Day
Contact Name: Simon McVeigh

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Polycyclic Aromatic Hydrocarbons	Metals M8 filtered	BTEX	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271													
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794													
Perth Laboratory - NATA Site # 18217													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	15	Feb 14, 2017		Water	S17-Fe12671	X	X		X	X	X	X	X
2	17	Feb 14, 2017		Water	S17-Fe12672	X	X		X	X	X	X	X
3	7	Feb 14, 2017		Water	S17-Fe12673	X	X		X	X	X	X	X
4	TS	Feb 14, 2017		Water	S17-Fe12674					X			
5	TB	Feb 14, 2017		Water	S17-Fe12675					X			
6	15	Feb 14, 2017		Water (Trace)	S17-Fe15875			X					
7	17	Feb 14, 2017		Water (Trace)	S17-Fe15876			X					
8	7	Feb 14, 2017		Water (Trace)	S17-Fe15877			X					
Test Counts						3	3	3	3	5	3	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
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							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.002			0.002	Pass	
1.2-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
2-Chloronaphthalene	mg/L	< 0.002			0.002	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.002			0.002	Pass	
2-Nitroaniline	mg/L	< 0.004			0.004	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.001			0.001	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.002			0.002	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.001			0.001	Pass	
4-Aminobiphenyl	mg/L	< 0.002			0.002	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.002			0.002	Pass	
4.4'-DDE	mg/L	< 0.002			0.002	Pass	
4.4'-DDT	mg/L	< 0.004			0.004	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.002			0.002	Pass	
Acetophenone	mg/L	< 0.002			0.002	Pass	
Aldrin	mg/L	< 0.002			0.002	Pass	
Aniline	mg/L	< 0.002			0.002	Pass	
b-BHC	mg/L	< 0.002			0.002	Pass	
Benzyl chloride	mg/L	< 0.001			0.001	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.002			0.002	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.002			0.002	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.02			0.02	Pass	
Butyl benzyl phthalate	mg/L	< 0.002			0.002	Pass	
d-BHC	mg/L	< 0.002			0.002	Pass	
Di-n-butyl phthalate	mg/L	< 0.002			0.002	Pass	
Di-n-octyl phthalate	mg/L	< 0.002			0.002	Pass	
Dibenz(a.j)acridine	mg/L	< 0.001			0.001	Pass	
Dibenzofuran	mg/L	< 0.002			0.002	Pass	
Dieldrin	mg/L	< 0.002			0.002	Pass	
Diethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethylaminoazobenzene	mg/L	< 0.002			0.002	Pass	
Diphenylamine	mg/L	< 0.002			0.002	Pass	
Endosulfan I	mg/L	< 0.002			0.002	Pass	
Endosulfan II	mg/L	< 0.002			0.002	Pass	
Endosulfan sulphate	mg/L	< 0.002			0.002	Pass	
Endrin	mg/L	< 0.002			0.002	Pass	
Endrin aldehyde	mg/L	< 0.002			0.002	Pass	
Endrin ketone	mg/L	< 0.002			0.002	Pass	
g-BHC (Lindane)	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.002			0.002	Pass	
Heptachlor epoxide	mg/L	< 0.002			0.002	Pass	
Hexachlorobenzene	mg/L	< 0.002			0.002	Pass	
Hexachlorobutadiene	mg/L	< 0.002			0.002	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.004			0.004	Pass	
Hexachloroethane	mg/L	< 0.002			0.002	Pass	
Methoxychlor	mg/L	< 0.001			0.001	Pass	
N-Nitrosodibutylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosodipropylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosopiperidine	mg/L	< 0.002			0.002	Pass	
Nitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorobenzene	mg/L	< 0.002			0.002	Pass	
Pentachloronitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.001			0.001	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							
TRH C6-C9	%	90			70-130	Pass	
TRH C10-C14	%	90			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	87			70-130	Pass	
Toluene	%	87			70-130	Pass	
Ethylbenzene	%	84			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
o-Xylene	%	87			70-130	Pass	
Xylenes - Total	%	88			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	104			70-130	Pass	
1.1-Dichloroethene	%	106			70-130	Pass	
1.1.1-Trichloroethane	%	105			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	102			70-130	Pass	
1.1.2-Trichloroethane	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	95			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	104			70-130	Pass	
1.2-Dichloroethane	%	107			70-130	Pass	
1.2-Dichloropropane	%	103			70-130	Pass	
1.2.3-Trichloropropane	%	95			70-130	Pass	
1.2.4-Trimethylbenzene	%	101			70-130	Pass	
1.3-Dichlorobenzene	%	106			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.3-Dichloropropane	%	102			70-130	Pass	
1.3.5-Trimethylbenzene	%	102			70-130	Pass	
1.4-Dichlorobenzene	%	105			70-130	Pass	
2-Butanone (MEK)	%	83			70-130	Pass	
2-Propanone (Acetone)	%	100			70-130	Pass	
4-Chlorotoluene	%	105			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	84			70-130	Pass	
Allyl chloride	%	109			70-130	Pass	
Bromobenzene	%	105			70-130	Pass	
Bromochloromethane	%	110			70-130	Pass	
Bromodichloromethane	%	103			70-130	Pass	
Bromoform	%	90			70-130	Pass	
Bromomethane	%	94			70-130	Pass	
Carbon disulfide	%	93			70-130	Pass	
Carbon Tetrachloride	%	105			70-130	Pass	
Chlorobenzene	%	103			70-130	Pass	
Chloroethane	%	108			70-130	Pass	
Chloroform	%	104			70-130	Pass	
Chloromethane	%	104			70-130	Pass	
cis-1.2-Dichloroethene	%	101			70-130	Pass	
cis-1.3-Dichloropropene	%	99			70-130	Pass	
Dibromochloromethane	%	98			70-130	Pass	
Dibromomethane	%	103			70-130	Pass	
Dichlorodifluoromethane	%	94			70-130	Pass	
Iodomethane	%	124			70-130	Pass	
Isopropyl benzene (Cumene)	%	102			70-130	Pass	
Methylene Chloride	%	108			70-130	Pass	
Styrene	%	100			70-130	Pass	
Tetrachloroethene	%	102			70-130	Pass	
trans-1.2-Dichloroethene	%	103			70-130	Pass	
trans-1.3-Dichloropropene	%	99			70-130	Pass	
Trichloroethene	%	103			70-130	Pass	
Trichlorofluoromethane	%	107			70-130	Pass	
Vinyl chloride	%	109			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	80			70-130	Pass	
TRH C6-C10	%	94			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	98			70-130	Pass	
Anthracene	%	110			70-130	Pass	
Benz(a)anthracene	%	111			70-130	Pass	
Benzo(a)pyrene	%	106			70-130	Pass	
Benzo(b&j)fluoranthene	%	107			70-130	Pass	
Benzo(g.h.i)perylene	%	101			70-130	Pass	
Benzo(k)fluoranthene	%	103			70-130	Pass	
Chrysene	%	113			70-130	Pass	
Dibenz(a.h)anthracene	%	91			70-130	Pass	
Fluoranthene	%	108			70-130	Pass	
Fluorene	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	93			70-130	Pass	
Naphthalene	%	86			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	92			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	75			70-130	Pass	
1.3-Dichlorobenzene	%	75			70-130	Pass	
1.4-Dichlorobenzene	%	75			70-130	Pass	
2-Chlorophenol	%	88			30-130	Pass	
2-Methylnaphthalene	%	75			70-130	Pass	
2.4-Dinitrotoluene	%	100			70-130	Pass	
4-Chloro-3-methylphenol	%	88			30-130	Pass	
N-Nitrosodipropylamine	%	75			70-130	Pass	
Pentachlorophenol	%	88			30-130	Pass	
Phenol	%	38			30-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Volatile Organics				Result 1					
1.1-Dichloroethane	S17-Fe11435	NCP	%	104			70-130	Pass	
1.1-Dichloroethene	S17-Fe11435	NCP	%	104			70-130	Pass	
1.1.1-Trichloroethane	S17-Fe11435	NCP	%	105			70-130	Pass	
1.1.1.2-Tetrachloroethane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.1.2-Trichloroethane	S17-Fe11435	NCP	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.2-Dibromoethane	S17-Fe11435	NCP	%	100			70-130	Pass	
1.2-Dichlorobenzene	S17-Fe11435	NCP	%	99			70-130	Pass	
1.2-Dichloroethane	S17-Fe11435	NCP	%	106			70-130	Pass	
1.2-Dichloropropane	S17-Fe11435	NCP	%	102			70-130	Pass	
1.2.3-Trichloropropane	S17-Fe11435	NCP	%	100			70-130	Pass	
1.2.4-Trimethylbenzene	S17-Fe11435	NCP	%	94			70-130	Pass	
1.3-Dichlorobenzene	S17-Fe11435	NCP	%	98			70-130	Pass	
1.3-Dichloropropane	S17-Fe11435	NCP	%	103			70-130	Pass	
1.3.5-Trimethylbenzene	S17-Fe11435	NCP	%	95			70-130	Pass	
1.4-Dichlorobenzene	S17-Fe11435	NCP	%	98			70-130	Pass	
2-Butanone (MEK)	S17-Fe11435	NCP	%	92			70-130	Pass	
2-Propanone (Acetone)	S17-Fe11435	NCP	%	128			70-130	Pass	
4-Chlorotoluene	S17-Fe11435	NCP	%	100			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Fe11435	NCP	%	105			70-130	Pass	
Allyl chloride	S17-Fe11435	NCP	%	105			70-130	Pass	
Bromobenzene	S17-Fe11435	NCP	%	100			70-130	Pass	
Bromochloromethane	S17-Fe11435	NCP	%	110			70-130	Pass	
Bromodichloromethane	S17-Fe11435	NCP	%	104			70-130	Pass	
Bromoform	S17-Fe11435	NCP	%	96			70-130	Pass	
Bromomethane	S17-Fe11435	NCP	%	95			70-130	Pass	
Carbon disulfide	S17-Fe11435	NCP	%	93			70-130	Pass	
Carbon Tetrachloride	S17-Fe11435	NCP	%	104			70-130	Pass	
Chlorobenzene	S17-Fe11435	NCP	%	102			70-130	Pass	
Chloroethane	S17-Fe11435	NCP	%	106			70-130	Pass	
Chloroform	S17-Fe11435	NCP	%	104			70-130	Pass	
Chloromethane	S17-Fe11435	NCP	%	104			70-130	Pass	
cis-1.2-Dichloroethene	S17-Fe11435	NCP	%	102			70-130	Pass	
cis-1.3-Dichloropropene	S17-Fe11435	NCP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dibromochloromethane	S17-Fe11435	NCP	%	101			70-130	Pass	
Dibromomethane	S17-Fe11435	NCP	%	105			70-130	Pass	
Dichlorodifluoromethane	S17-Fe11435	NCP	%	89			70-130	Pass	
Iodomethane	S17-Fe11435	NCP	%	100			70-130	Pass	
Isopropyl benzene (Cumene)	S17-Fe11435	NCP	%	98			70-130	Pass	
Methylene Chloride	S17-Fe11435	NCP	%	114			70-130	Pass	
Styrene	S17-Fe11435	NCP	%	99			70-130	Pass	
Tetrachloroethene	S17-Fe11435	NCP	%	98			70-130	Pass	
trans-1.2-Dichloroethene	S17-Fe11435	NCP	%	101			70-130	Pass	
trans-1.3-Dichloropropene	S17-Fe11435	NCP	%	98			70-130	Pass	
Trichloroethene	S17-Fe11435	NCP	%	101			70-130	Pass	
Trichlorofluoromethane	S17-Fe11435	NCP	%	103			70-130	Pass	
Vinyl chloride	S17-Fe11435	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S17-Fe12673	CP	%	98			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Fe12673	CP	%	82			70-130	Pass	
Toluene	S17-Fe12673	CP	%	81			70-130	Pass	
Ethylbenzene	S17-Fe12673	CP	%	79			70-130	Pass	
m&p-Xylenes	S17-Fe12673	CP	%	82			70-130	Pass	
o-Xylene	S17-Fe12673	CP	%	81			70-130	Pass	
Xylenes - Total	S17-Fe12673	CP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Fe12673	CP	%	82			70-130	Pass	
TRH C6-C10	S17-Fe12673	CP	%	93			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S17-Fe13156	NCP	%	70			70-130	Pass	
Acenaphthylene	S17-Fe13156	NCP	%	107			70-130	Pass	
Benz(a)anthracene	S17-Fe13156	NCP	%	91			70-130	Pass	
Benzo(a)pyrene	S17-Fe13156	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	S17-Fe13156	NCP	%	100			70-130	Pass	
Benzo(g.h.i)perylene	S17-Fe13156	NCP	%	71			70-130	Pass	
Benzo(k)fluoranthene	S17-Fe13156	NCP	%	75			70-130	Pass	
Chrysene	S17-Fe13156	NCP	%	73			70-130	Pass	
Dibenz(a.h)anthracene	S17-Fe13156	NCP	%	74			70-130	Pass	
Fluoranthene	S17-Fe13156	NCP	%	72			70-130	Pass	
Fluorene	S17-Fe13156	NCP	%	74			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S17-Fe13156	NCP	%	70			70-130	Pass	
Naphthalene	S17-Fe13156	NCP	%	105			70-130	Pass	
Pyrene	S17-Fe13156	NCP	%	72			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.1-Dichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1-Trichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.1.2-Tetrachloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2-Trichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.1.2.2-Tetrachloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dibromoethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
Volatile Organics				Result 1	Result 2	RPD			
1.2-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2-Dichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.3-Trichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.2.4-Trimethylbenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3-Dichloropropane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.3.5-Trimethylbenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
1.4-Dichlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Butanone (MEK)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
2-Propanone (Acetone)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Chlorotoluene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
4-Methyl-2-pentanone (MIBK)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Allyl chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromochloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromodichloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Bromoform	S17-Fe11436	NCP	mg/L	0.002	0.002	4.0	30%	Pass	
Bromomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon disulfide	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Carbon Tetrachloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chlorobenzene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chloroform	S17-Fe11436	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Chloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.2-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
cis-1.3-Dichloropropene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromochloromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibromomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dichlorodifluoromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Iodomethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Isopropyl benzene (Cumene)	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Methylene Chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Styrene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Tetrachloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.2-Dichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
trans-1.3-Dichloropropene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichloroethene	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Trichlorofluoromethane	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Vinyl chloride	S17-Fe11436	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	S17-Fe14155	NCP	uS/cm	1200	1200	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Fe12672	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Fe12672	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Fe12672	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Fe12672	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Fe12672	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
o-Xylene	S17-Fe12672	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Fe12672	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Fe12672	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Fe12672	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S17-Fe13155	NCP	mg/L	< 0.001	< 0.001	<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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)



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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Sample Receipt Advice

Company name:	**JBS & G Australia (NSW & WA) P/L**
Contact name:	Simon McVeigh
Project name:	CHESTER HILL SURFACE ROUND 2
Project ID:	52401
COC number:	Not provided
Turn around time:	5 Day
Date/Time received:	Feb 14, 2017 10:57 AM
Eurofins | mgt reference:	**534036**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 10 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Simon McVeigh - SMcVeigh@jbsg.com.au.

010117

CHAIN OF CUSTODY

PROJECT NO.: 52401
PROJECT NAME: CHESTER HILL SURFACE ROUND 2
DATE NEEDED BY: STANDARD

LABORATORY BATCH NO.:
SAMPLERS: SM
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....SMcVeigh.....@jbsg.com.au; (3) .....Cbelby.....@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TPH/BTEX	METALS	PAH	VOC	SVOC	EC	PH	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
15	WATER	14.2.17		AMBER + 3 VIALS (ACID) + METALS (NITRIC)		X	X	X	X	X	X	X				
17	↓	↓		↓		↓	↓	↓	↓	↓	↓	↓				
7	↓	↓		↓		↓	↓	↓	↓	↓	↓	↓				
T SPIKE/T BLANK	↓	↓		VIALS									X			

RELINQUISHED BY:
NAME: SMcVeigh DATE: 14/2/17
OF: JBS&G

NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.

CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: EM for Envirolabs
DATE:
OF:

NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar, B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Certificate of Analysis

JBS & G Australia (NSW & WA) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **534514-W**
Project name CHESTER HILL
Project ID 52401
Received Date Feb 16, 2017

Client Sample ID			**15**	**17**	**7**	**TSPIKE**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Fe16616**	**S17-Fe16617**	**S17-Fe16618**	**S17-Fe16619**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	0.10	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	0.7	< 0.1	0.2	-
TRH C29-C36	0.1	mg/L	0.1	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	0.9	< 0.1	0.2	-
BTEX						
Comments						R20
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	100%
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	110%
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	99%
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	100%
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	100%
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	100%
4-Bromofluorobenzene (surr.)	1	%	97	91	92	102
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	0.005	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	0.028	< 0.001	< 0.001	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	0.016	< 0.001	< 0.001	-

Client Sample ID			15	17	7	TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe16616	S17-Fe16617	S17-Fe16618	S17-Fe16619
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	0.005	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	97	97	97	-
4-Bromofluorobenzene (surr.)	1	%	97	91	92	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	0.21	< 0.05	< 0.05	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	0.21	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	0.8	< 0.1	0.3	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			15	17	7	TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe16616	S17-Fe16617	S17-Fe16618	S17-Fe16619
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Semivolatile Organics						
1.2.3-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.4-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.5-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.4.5-Tetrachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3.5-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chloronaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Methylnaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Nitroaniline	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Picoline	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.3.4.6-Tetrachlorophenol	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrophenol	0.001	mg/L	< 1	< 1	< 1	-
2.4-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.6-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	0.010	< 0.006	< 0.006	-
3-Methylcholanthrene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
3.3'-Dichlorobenzidine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Aminobiphenyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Bromophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Chlorophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Nitrophenol	0.001	mg/L	< 1	< 1	< 1	-
4.4'-DDD	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDE	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDT	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
7.12-Dimethylbenz(a)anthracene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
a-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Acenaphthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Acenaphthylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Acetophenone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aniline	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
b-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Benz(a)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(a)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-

Client Sample ID			15	17	7	TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe16616	S17-Fe16617	S17-Fe16618	S17-Fe16619
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Semivolatile Organics						
Benzo(k)fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Benzyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bis(2-chloroethoxy)methane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-chloroisopropyl)ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-ethylhexyl)phthalate	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Butyl benzyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chrysene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
d-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-butyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-octyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Dibenz(a.j)acridine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenzofuran	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dieldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethylaminoazobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diphenylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan I	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan II	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan sulphate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin aldehyde	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin ketone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fluoranthene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Fluorene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
g-BHC (Lindane)	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor epoxide	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobutadiene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorocyclopentadiene	0.004	mg/L	< 1	< 1	< 1	-
Hexachloroethane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Methoxychlor	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
N-Nitrosodibutylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodipropylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosopiperidine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naphthalene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Nitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachloronitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Pronamide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.00001	mg/L	< 0.00001	< 0.00001	< 0.00001	-
Trifluralin	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol-d6 (surr.)	1	%	55	46	49	-

Client Sample ID			15	17	7	TSPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Fe16616	S17-Fe16617	S17-Fe16618	S17-Fe16619
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
Test/Reference	LOR	Unit				
Semivolatile Organics						
Nitrobenzene-d5 (surr.)	1	%	118	115	133	-
2-Fluorobiphenyl (surr.)	1	%	109	109	119	-
2.4.6-Tribromophenol (surr.)	1	%	n/a	n/a	n/a	-
Conductivity (at 25°C)	1	uS/cm	1100	1200	2300	-
pH	0.1	pH Units	7.6	7.8	7.8	-

Client Sample ID			BLANK	15	17	7
Sample Matrix			Water	Water (Trace)	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Fe16620	S17-Fe17108	S17-Fe17109	S17-Fe17110
Date Sampled			Not Provided	Not Provided	Not Provided	Not Provided
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	%	91	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00001	mg/L	-	< 0.00001	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	-	0.00010	< 0.00001	0.00020
Anthracene	0.00001	mg/L	-	0.00020	< 0.00001	0.00060
Benz(a)anthracene	0.00001	mg/L	-	0.00040	0.00010	0.00080
Benzo(a)pyrene	0.00001	mg/L	-	0.00050	0.00010	0.00090
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	-	0.00050	0.00020	0.00090
Benzo(g.h.i)perylene	0.00001	mg/L	-	0.00030	0.00010	0.00040
Benzo(k)fluoranthene	0.00001	mg/L	-	0.00030	0.00010	0.00050
Chrysene	0.00001	mg/L	-	0.00060	0.00020	0.00080
Dibenz(a.h)anthracene	0.00001	mg/L	-	< 0.00001	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	-	0.00080	0.00020	0.0012
Fluorene	0.00001	mg/L	-	< 0.00001	< 0.00001	0.00020
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	0.00020	0.00010	0.00040
Naphthalene	0.00001	mg/L	-	0.00010	0.00010	0.00020
Phenanthrene	0.00001	mg/L	-	0.00090	0.00020	0.0031
Pyrene	0.00001	mg/L	-	0.0010	0.00030	0.0015
Total PAH*	0.00001	mg/L	-	0.0059	0.0017	0.0117
2-Fluorobiphenyl (surr.)	1	%	-	INT	69	55
p-Terphenyl-d14 (surr.)	1	%	-	INT	69	51

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	Sydney	Feb 21, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 17, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 21, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Feb 17, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Feb 17, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 21, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Semivolatile Organics	Sydney	Feb 21, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Sydney	Feb 21, 2017	28 Day
- Method: LTM-INO-4030			
pH	Sydney	Feb 21, 2017	1 Day
- Method: LTM-GEN-7090 pH in water by ISE			

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Address: Level 1, 50 Margaret St
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NSW 2000

Project Name: CHESTERHILL
Project ID: 52401

Order No.:
Report #: 534514
Phone: 02 8245 0300
Fax:

Received: Feb 16, 2017 5:20 PM
Due: Feb 23, 2017
Priority: 5 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Polycyclic Aromatic Hydrocarbons	BTEX	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271												
Sydney Laboratory - NATA Site # 18217						X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794												
Perth Laboratory - NATA Site # 18217												
External Laboratory												
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**							
1	15	Not Provided		Water	S17-Fe16616	X	X	X	X	X	X	X
2	17	Not Provided		Water	S17-Fe16617	X	X	X	X	X	X	X
3	7	Not Provided		Water	S17-Fe16618	X	X	X	X	X	X	X
4	TSPIKE	Not Provided		Water	S17-Fe16619				X			
5	BLANK	Not Provided		Water	S17-Fe16620				X			
6	15	Not Provided		Water (Trace)	S17-Fe17108			X				
7	17	Not Provided		Water (Trace)	S17-Fe17109			X				
8	7	Not Provided		Water (Trace)	S17-Fe17110			X				
Test Counts						3	3	6	5	3	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.002			0.002	Pass	
1.2-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
2-Chloronaphthalene	mg/L	< 0.002			0.002	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.002			0.002	Pass	
2-Nitroaniline	mg/L	< 0.004			0.004	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.001			0.001	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.002			0.002	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.001			0.001	Pass	
4-Aminobiphenyl	mg/L	< 0.002			0.002	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.002			0.002	Pass	
4.4'-DDE	mg/L	< 0.002			0.002	Pass	
4.4'-DDT	mg/L	< 0.004			0.004	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.002			0.002	Pass	
Acetophenone	mg/L	< 0.002			0.002	Pass	
Aldrin	mg/L	< 0.002			0.002	Pass	
Aniline	mg/L	< 0.002			0.002	Pass	
b-BHC	mg/L	< 0.002			0.002	Pass	
Benzyl chloride	mg/L	< 0.001			0.001	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.002			0.002	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.002			0.002	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.02			0.02	Pass	
Butyl benzyl phthalate	mg/L	< 0.002			0.002	Pass	
d-BHC	mg/L	< 0.002			0.002	Pass	
Di-n-butyl phthalate	mg/L	< 0.002			0.002	Pass	
Di-n-octyl phthalate	mg/L	< 0.002			0.002	Pass	
Dibenz(a.j)acridine	mg/L	< 0.001			0.001	Pass	
Dibenzofuran	mg/L	< 0.002			0.002	Pass	
Dieldrin	mg/L	< 0.002			0.002	Pass	
Diethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethylaminoazobenzene	mg/L	< 0.002			0.002	Pass	
Diphenylamine	mg/L	< 0.002			0.002	Pass	
Endosulfan I	mg/L	< 0.002			0.002	Pass	
Endosulfan II	mg/L	< 0.002			0.002	Pass	
Endosulfan sulphate	mg/L	< 0.002			0.002	Pass	
Endrin	mg/L	< 0.002			0.002	Pass	
Endrin aldehyde	mg/L	< 0.002			0.002	Pass	
Endrin ketone	mg/L	< 0.002			0.002	Pass	
g-BHC (Lindane)	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Heptachlor	mg/L	< 0.002			0.002	Pass	
Heptachlor epoxide	mg/L	< 0.002			0.002	Pass	
Hexachlorobenzene	mg/L	< 0.002			0.002	Pass	
Hexachlorobutadiene	mg/L	< 0.002			0.002	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.004			0.004	Pass	
Hexachloroethane	mg/L	< 0.002			0.002	Pass	
Methoxychlor	mg/L	< 0.001			0.001	Pass	
N-Nitrosodibutylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosodipropylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosopiperidine	mg/L	< 0.002			0.002	Pass	
Nitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorobenzene	mg/L	< 0.002			0.002	Pass	
Pentachloronitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.001			0.001	Pass	
Method Blank							
Conductivity (at 25°C)	uS/cm	< 1			1	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	72			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	100			70-130	Pass	
Toluene	%	104			70-130	Pass	
Ethylbenzene	%	101			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	105			70-130	Pass	
Xylenes - Total	%	104			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	102			70-130	Pass	
1.1-Dichloroethene	%	102			70-130	Pass	
1.1.1-Trichloroethane	%	102			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	103			70-130	Pass	
1.1.2-Trichloroethane	%	100			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	103			70-130	Pass	
1.2-Dibromoethane	%	99			70-130	Pass	
1.2-Dichlorobenzene	%	102			70-130	Pass	
1.2-Dichloroethane	%	100			70-130	Pass	
1.2-Dichloropropane	%	100			70-130	Pass	
1.2.3-Trichloropropane	%	102			70-130	Pass	
1.2.4-Trimethylbenzene	%	100			70-130	Pass	
1.3-Dichlorobenzene	%	103			70-130	Pass	
1.3-Dichloropropane	%	100			70-130	Pass	
1.3.5-Trimethylbenzene	%	101			70-130	Pass	
1.4-Dichlorobenzene	%	103			70-130	Pass	
2-Butanone (MEK)	%	95			70-130	Pass	
2-Propanone (Acetone)	%	107			70-130	Pass	
4-Chlorotoluene	%	101			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	95			70-130	Pass	
Allyl chloride	%	103			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Bromobenzene	%	102			70-130	Pass	
Bromochloromethane	%	106			70-130	Pass	
Bromodichloromethane	%	101			70-130	Pass	
Bromoform	%	102			70-130	Pass	
Bromomethane	%	102			70-130	Pass	
Carbon disulfide	%	100			70-130	Pass	
Carbon Tetrachloride	%	104			70-130	Pass	
Chlorobenzene	%	104			70-130	Pass	
Chloroethane	%	102			70-130	Pass	
Chloroform	%	101			70-130	Pass	
Chloromethane	%	99			70-130	Pass	
cis-1.2-Dichloroethene	%	101			70-130	Pass	
cis-1.3-Dichloropropene	%	95			70-130	Pass	
Dibromochloromethane	%	99			70-130	Pass	
Dibromomethane	%	101			70-130	Pass	
Dichlorodifluoromethane	%	91			70-130	Pass	
Iodomethane	%	84			70-130	Pass	
Isopropyl benzene (Cumene)	%	103			70-130	Pass	
Methylene Chloride	%	106			70-130	Pass	
Styrene	%	103			70-130	Pass	
Tetrachloroethene	%	99			70-130	Pass	
trans-1.2-Dichloroethene	%	101			70-130	Pass	
trans-1.3-Dichloropropene	%	96			70-130	Pass	
Trichloroethene	%	101			70-130	Pass	
Trichlorofluoromethane	%	102			70-130	Pass	
Vinyl chloride	%	91			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	118			70-130	Pass	
TRH C6-C10	%	109			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	96			70-130	Pass	
Acenaphthylene	%	90			70-130	Pass	
Anthracene	%	91			70-130	Pass	
Benz(a)anthracene	%	89			70-130	Pass	
Benzo(a)pyrene	%	94			70-130	Pass	
Benzo(b&j)fluoranthene	%	88			70-130	Pass	
Benzo(g.h.i)perylene	%	81			70-130	Pass	
Benzo(k)fluoranthene	%	87			70-130	Pass	
Chrysene	%	97			70-130	Pass	
Dibenz(a.h)anthracene	%	83			70-130	Pass	
Fluoranthene	%	92			70-130	Pass	
Fluorene	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	72			70-130	Pass	
Naphthalene	%	99			70-130	Pass	
Phenanthrene	%	95			70-130	Pass	
Pyrene	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	74			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	125			70-130	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
1.3-Dichlorobenzene			%	100			70-130	Pass	
1.4-Dichlorobenzene			%	125			70-130	Pass	
2-Chlorophenol			%	125			30-130	Pass	
2.4-Dinitrotoluene			%	100			70-130	Pass	
4-Chloro-3-methylphenol			%	125			30-130	Pass	
Acenaphthene			%	125			70-130	Pass	
N-Nitrosodipropylamine			%	100			70-130	Pass	
Pentachlorophenol			%	113			30-130	Pass	
Phenol			%	50			30-130	Pass	
Pyrene			%	125			70-130	Pass	
LCS - % Recovery									
Conductivity (at 25°C)			%	102			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	S17-Fe16618	CP	%	99			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Fe16618	CP	%	102			70-130	Pass	
Toluene	S17-Fe16618	CP	%	107			70-130	Pass	
Ethylbenzene	S17-Fe16618	CP	%	102			70-130	Pass	
m&p-Xylenes	S17-Fe16618	CP	%	104			70-130	Pass	
o-Xylene	S17-Fe16618	CP	%	104			70-130	Pass	
Xylenes - Total	S17-Fe16618	CP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Fe16618	CP	%	108			70-130	Pass	
TRH C6-C10	S17-Fe16618	CP	%	98			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (at 25°C)	S17-Fe16616	CP	uS/cm	1100	1100	1.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S17-Fe16617	CP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Fe16617	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Fe16617	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Fe16617	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Fe16617	CP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Fe16617	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Fe16617	CP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Fe16617	CP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Fe16617	CP	mg/L	< 0.02	< 0.02	<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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)



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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Sample Receipt Advice

Company name: **JBS & G Australia (NSW & WA) P/L**

Contact name: Chris Bielby
Project name: CHESTERHILL
Project ID: 52401
COC number: 02132
Turn around time: 5 Day
Date/Time received: Feb 16, 2017 5:20 PM
Eurofins | mgt reference: **534514**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 16.7 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

02132

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: S2401
PROJECT NAME: CHESTER HILL
SEND REPORT TO: CbielbytSmcoreigh AND INVOICE TO: Invoices
DATE NEEDED BY: Standard

LABORATORY BATCH NO.:
SAMPLERS: SMcoreigh
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: SMcoreigh
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PAH/Phenols	TRH/BTEX	BTEXN/Metals	VOCs	SVOCs	eC/pH	B Hex	NOTES:
15	WATER			3xAmb/1xAmber/Metals/Cr6		X	X	X	X	X	X		
17	↓					↓	↓	↓	↓	↓	↓		
7	↓												
TSPIKE/BLANK	↓											X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DAVID DATE: 16/02/17	CONSIGNMENT NOTE NO.	NAME: DAVID DATE: 16/2	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: SMcoreigh 5:20pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

534514

02132

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: S2401
PROJECT NAME: CHESTER HILL
SEND REPORT TO: CbielbytSmcoreigh AND INVOICE TO: Invoices
DATE NEEDED BY: Standard

LABORATORY BATCH NO.:
SAMPLERS: SMcoreigh
PHONE: SYDNEY 02 8245 0300 – PERTH 08 9488 0100 EMAIL: SMcoreigh
QC LEVEL: NEPM (2013)

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	PAH/Phenols	TRH/BTEX	BTEXN/Metals	VOCs	SVOCs	eC/pH	B Hex	NOTES:
15	WATER			3xAmb/1xAmber/Metals/Cr6		X	X	X	X	X	X		
17	↓					↓	↓	↓	↓	↓	↓		
7	↓												
TSPIKE/BLANK	↓											X	

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: DAVID DATE: 16/02/17	CONSIGNMENT NOTE NO.	NAME: DAVID DATE: 16/2	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: SMcoreigh 5:20pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

IMSO FormsO13 – Chain of Custody - Generic

534514

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **536199-W-V2**
Project name CHESTER HILL
Project ID 52401
Received Date Mar 09, 2017

Client Sample ID			**15**	**17**	**7**	**15**
Sample Matrix			**Water**	**Water**	**Water**	**Water (Trace)**
Eurofins | mgt Sample No.			**S17-Ma01582**	**S17-Ma01583**	**S17-Ma01584**	**S17-Ma08946**
Date Sampled			**Mar 01, 2017**	**Mar 01, 2017**	**Mar 01, 2017**	**Mar 01, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	< 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	%	92	92	90	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	0.015	< 0.001	0.035	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			15	17	7	15
Sample Matrix			Water	Water	Water	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma01582	S17-Ma01583	S17-Ma01584	S17-Ma08946
Date Sampled			Mar 01, 2017	Mar 01, 2017	Mar 01, 2017	Mar 01, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	91	91	91	-
4-Bromofluorobenzene (surr.)	1	%	92	92	90	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.00010
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.00010
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.00010

Client Sample ID			15	17	7	15
Sample Matrix			Water	Water	Water	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma01582	S17-Ma01583	S17-Ma01584	S17-Ma08946
Date Sampled			Mar 01, 2017	Mar 01, 2017	Mar 01, 2017	Mar 01, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.00010
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.00005
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.00010
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	0.0005
2-Fluorobiphenyl (surr.)	1	%	81	86	98	55
p-Terphenyl-d14 (surr.)	1	%	69	72	82	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.3-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.4-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.5-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.4.5-Tetrachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3.5-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chloronaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Methylnaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Nitroaniline	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Picoline	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.3.4.6-Tetrachlorophenol	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.6-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	< 0.006	-
3-Methylcholanthrene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
3.3'-Dichlorobenzidine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Aminobiphenyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Bromophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			15	17	7	15
Sample Matrix			**Water**	**Water**	**Water**	**Water (Trace)**
Eurofins | mgt Sample No.			**S17-Ma01582**	**S17-Ma01583**	**S17-Ma01584**	**S17-Ma08946**
Date Sampled			**Mar 01, 2017**	**Mar 01, 2017**	**Mar 01, 2017**	**Mar 01, 2017**
Test/Reference	LOR	Unit				
Semivolatile Organics						
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Chlorophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4.4'-DDD	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDE	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDT	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
7.12-Dimethylbenz(a)anthracene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
a-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aniline	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bis(2-chloroethoxy)methane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-chloroisopropyl)ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-ethylhexyl)phthalate	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Butyl benzyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-butyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-octyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.j)acridine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenzofuran	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dieldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethylaminoazobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diphenylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan I	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan II	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan sulphate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin aldehyde	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin ketone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
g-BHC (Lindane)	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor epoxide	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			15	17	7	15
Sample Matrix			Water	Water	Water	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma01582	S17-Ma01583	S17-Ma01584	S17-Ma08946
Date Sampled			Mar 01, 2017	Mar 01, 2017	Mar 01, 2017	Mar 01, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Hexachlorobutadiene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorocyclopentadiene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
Hexachloroethane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.001	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodibutylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodipropylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosopiperidine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachloronitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Pronamide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol-d6 (surr.)	1	%	30	35	36	-
Nitrobenzene-d5 (surr.)	1	%	94	99	109	-
2-Fluorobiphenyl (surr.)	1	%	81	86	98	-
2.4.6-Tribromophenol (surr.)	1	%	60	80	76	-
Ammonia (as N)	0.01	mg/L	0.02	< 0.01	< 0.01	-
Chloride	1	mg/L	7.9	9.5	4.2	-
Conductivity (at 25°C)	1	uS/cm	280	330	110	-
Nitrate (as N)	0.02	mg/L	0.08	0.09	0.08	-
pH	0.1	pH Units	8.1	8.5	8.9	-
Sulphate (as SO4)	2	mg/L	53	53	14	-
Sulphide (as S)	0.05	mg/L	< 0.05	< 0.05	< 0.05	-
Turbidity	1	NTU	320	16000	68000	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	5	mg/L	58	140	95	-
Carbonate Alkalinity (as CaCO3)	5	mg/L	< 5	< 5	< 5	-
Alkali Metals						
Calcium	0.5	mg/L	50	170	66	-
Magnesium	0.5	mg/L	2.9	7.4	4.3	-
Potassium	0.5	mg/L	3.7	5.2	3.1	-
Sodium	0.5	mg/L	10	13	7.1	-
Heavy Metals						
Arsenic	0.001	mg/L	0.001	0.002	0.002	-
Arsenic (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	-
Cadmium	0.0002	mg/L	< 0.0002	0.0003	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.003	0.010	0.007	-
Chromium (filtered)	0.001	mg/L	< 0.001	0.001	< 0.001	-
Copper	0.001	mg/L	0.017	0.060	0.059	-
Copper (filtered)	0.001	mg/L	0.003	0.002	< 0.001	-
Lead	0.001	mg/L	0.041	0.12	0.10	-

Client Sample ID			15	17	7	15
Sample Matrix			Water	Water	Water	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma01582	S17-Ma01583	S17-Ma01584	S17-Ma08946
Date Sampled			Mar 01, 2017	Mar 01, 2017	Mar 01, 2017	Mar 01, 2017
Test/Reference	LOR	Unit				
Heavy Metals						
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.003	0.015	0.012	-
Nickel (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Zinc	0.005	mg/L	0.12	0.66	0.36	-
Zinc (filtered)	0.005	mg/L	< 0.005	< 0.005	< 0.005	-

Client Sample ID			17	7
Sample Matrix			Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma08947	S17-Ma08948
Date Sampled			Mar 01, 2017	Mar 01, 2017
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Acenaphthene	0.00005	mg/L	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	< 0.00005	0.00010
Anthracene	0.00005	mg/L	< 0.00005	< 0.00005
Benz(a)anthracene	0.00005	mg/L	0.00010	0.00020
Benzo(a)pyrene	0.00001	mg/L	0.00010	0.00020
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	0.00020	0.00030
Benzo(g.h.i)perylene	0.00005	mg/L	0.00010	0.00010
Benzo(k)fluoranthene	0.00005	mg/L	0.00010	0.00020
Chrysene	0.00005	mg/L	0.00010	0.00020
Dibenz(a.h)anthracene	0.00005	mg/L	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	0.00020	0.00020
Fluorene	0.00005	mg/L	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	0.00010	0.00010
Naphthalene	0.00005	mg/L	< 0.00005	< 0.00005
Phenanthrene	0.00005	mg/L	0.00010	0.00010
Pyrene	0.00005	mg/L	0.00030	0.00030
Total PAH*	0.00005	mg/L	0.0014	0.002
2-Fluorobiphenyl (surr.)	1	%	58	64
p-Terphenyl-d14 (surr.)	1	%	74	86

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	Sydney	Mar 06, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 02, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 06, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Mar 02, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Mar 02, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 09, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Semivolatile Organics	Sydney	Mar 06, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Sydney	Mar 07, 2017	28 Day
- Method: LTM-INO-4030			
pH	Sydney	Mar 07, 2017	1 Day
- Method: LTM-GEN-7090 pH in water by ISE			
Sulphide (as S)	Melbourne	Mar 09, 2017	7 Day
- Method: APHA 4500-S C & D - Sulphide			
Turbidity	Sydney	Mar 03, 2017	2 Day
- Method: LTM-INO-4140 'Turbidity by Nephelometric Method'			
Metals M8	Sydney	Mar 03, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Metals M8 filtered	Sydney	Mar 03, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Eurofins | mgt Suite B11			
Ammonia (as N)	Sydney	Mar 09, 2017	28 Day
- Method: E036/E050 Ammonia as N			
Chloride	Sydney	Mar 10, 2017	28 Day
- Method: E033 /E045 /E047 Chloride			
Nitrate (as N)	Melbourne	Mar 10, 2017	7 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Sulphate (as SO4)	Sydney	Mar 10, 2017	28 Day
- Method: E045 Sulphate			
Alkalinity (speciated)	Sydney	Mar 10, 2017	14 Days
- Method: E035 Alkalinity			
Alkali Metals	Sydney	Mar 09, 2017	180 Day
- Method: E022/E030 Unfiltered Cations in Water			

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Project Name: CHESTER HILL
Project ID: 52401

Order No.:
Report #: 536199
Phone: 02 8245 0300
Fax:

Received: Mar 9, 2017 12:54 PM
Due: Mar 10, 2017
Priority: 1 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Sulphide (as S)	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B11	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271								X						X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																	
Perth Laboratory - NATA Site # 18217																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	15	Mar 01, 2017		Water	S17-Ma01582	X	X	X	X	X	X	X	X	X	X	X	X
2	17	Mar 01, 2017		Water	S17-Ma01583	X	X	X	X	X	X	X	X	X	X	X	X
3	7	Mar 01, 2017		Water	S17-Ma01584	X	X	X	X	X	X	X	X	X	X	X	X
4	15	Mar 01, 2017		Water (Trace)	S17-Ma08946					X							
5	17	Mar 01, 2017		Water (Trace)	S17-Ma08947					X							
6	7	Mar 01, 2017		Water (Trace)	S17-Ma08948					X							
Test Counts						3	3	3	3	6	3	3	3	3	3	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

****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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00005			0.00005	Pass	
Acenaphthylene	mg/L	< 0.00005			0.00005	Pass	
Anthracene	mg/L	< 0.00005			0.00005	Pass	
Benz(a)anthracene	mg/L	< 0.00005			0.00005	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00005			0.00005	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.002			0.002	Pass	
1.2-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
2-Chloronaphthalene	mg/L	< 0.002			0.002	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.002			0.002	Pass	
2-Nitroaniline	mg/L	< 0.004			0.004	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.001			0.001	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.002			0.002	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.001			0.001	Pass	
4-Aminobiphenyl	mg/L	< 0.002			0.002	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.002			0.002	Pass	
4.4'-DDE	mg/L	< 0.002			0.002	Pass	
4.4'-DDT	mg/L	< 0.004			0.004	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.002			0.002	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.002			0.002	Pass	
Aldrin	mg/L	< 0.002			0.002	Pass	
Aniline	mg/L	< 0.002			0.002	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-BHC	mg/L	< 0.002			0.002	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	
Benzyl chloride	mg/L	< 0.001			0.001	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.002			0.002	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.002			0.002	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.02			0.02	Pass	
Butyl benzyl phthalate	mg/L	< 0.002			0.002	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-BHC	mg/L	< 0.002			0.002	Pass	
Di-n-butyl phthalate	mg/L	< 0.002			0.002	Pass	
Di-n-octyl phthalate	mg/L	< 0.002			0.002	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.j)acridine	mg/L	< 0.001			0.001	Pass	
Dibenzofuran	mg/L	< 0.002			0.002	Pass	
Diethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethyl phthalate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dimethylaminoazobenzene	mg/L	< 0.002			0.002	Pass	
Diphenylamine	mg/L	< 0.002			0.002	Pass	
Endosulfan I	mg/L	< 0.002			0.002	Pass	
Endosulfan II	mg/L	< 0.002			0.002	Pass	
Endosulfan sulphate	mg/L	< 0.002			0.002	Pass	
Endrin	mg/L	< 0.002			0.002	Pass	
Endrin aldehyde	mg/L	< 0.002			0.002	Pass	
Endrin ketone	mg/L	< 0.002			0.002	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-BHC (Lindane)	mg/L	< 0.002			0.002	Pass	
Heptachlor	mg/L	< 0.002			0.002	Pass	
Heptachlor epoxide	mg/L	< 0.002			0.002	Pass	
Hexachlorobenzene	mg/L	< 0.002			0.002	Pass	
Hexachlorobutadiene	mg/L	< 0.002			0.002	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.004			0.004	Pass	
Hexachloroethane	mg/L	< 0.002			0.002	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
N-Nitrosodibutylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosodipropylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosopiperidine	mg/L	< 0.002			0.002	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorobenzene	mg/L	< 0.002			0.002	Pass	
Pentachloronitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25°C)	uS/cm	< 1			1	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Sulphide (as S)	mg/L	< 0.05			0.05	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 5			5	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 5			5	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Nickel (filtered)	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	104			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	85			70-130	Pass	
Toluene	%	86			70-130	Pass	
Ethylbenzene	%	91			70-130	Pass	
m&p-Xylenes	%	89			70-130	Pass	
o-Xylene	%	90			70-130	Pass	
Xylenes - Total	%	89			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	96			70-130	Pass	
1.1-Dichloroethene	%	95			70-130	Pass	
1.1.1-Trichloroethane	%	99			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	98			70-130	Pass	
1.1.2-Trichloroethane	%	102			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	89			70-130	Pass	
1.2-Dibromoethane	%	100			70-130	Pass	
1.2-Dichlorobenzene	%	99			70-130	Pass	
1.2-Dichloroethane	%	100			70-130	Pass	
1.2-Dichloropropane	%	99			70-130	Pass	
1.2.3-Trichloropropane	%	94			70-130	Pass	
1.2.4-Trimethylbenzene	%	96			70-130	Pass	
1.3-Dichlorobenzene	%	101			70-130	Pass	
1.3-Dichloropropane	%	99			70-130	Pass	
1.3.5-Trimethylbenzene	%	98			70-130	Pass	
1.4-Dichlorobenzene	%	100			70-130	Pass	
2-Butanone (MEK)	%	88			70-130	Pass	
2-Propanone (Acetone)	%	90			70-130	Pass	
4-Chlorotoluene	%	100			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	88			70-130	Pass	
Allyl chloride	%	93			70-130	Pass	
Bromobenzene	%	96			70-130	Pass	
Bromochloromethane	%	97			70-130	Pass	
Bromodichloromethane	%	101			70-130	Pass	
Bromoform	%	96			70-130	Pass	
Bromomethane	%	91			70-130	Pass	
Carbon disulfide	%	95			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbon Tetrachloride	%	98			70-130	Pass	
Chlorobenzene	%	100			70-130	Pass	
Chloroethane	%	93			70-130	Pass	
Chloroform	%	99			70-130	Pass	
Chloromethane	%	76			70-130	Pass	
cis-1.2-Dichloroethene	%	101			70-130	Pass	
cis-1.3-Dichloropropene	%	92			70-130	Pass	
Dibromochloromethane	%	102			70-130	Pass	
Dibromomethane	%	101			70-130	Pass	
Dichlorodifluoromethane	%	78			70-130	Pass	
Iodomethane	%	103			70-130	Pass	
Isopropyl benzene (Cumene)	%	97			70-130	Pass	
Methylene Chloride	%	92			70-130	Pass	
Styrene	%	95			70-130	Pass	
Tetrachloroethene	%	106			70-130	Pass	
trans-1.2-Dichloroethene	%	96			70-130	Pass	
trans-1.3-Dichloropropene	%	96			70-130	Pass	
Trichloroethene	%	108			70-130	Pass	
Trichlorofluoromethane	%	96			70-130	Pass	
Vinyl chloride	%	92			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	101			70-130	Pass	
TRH C6-C10	%	92			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	98			70-130	Pass	
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	95			70-130	Pass	
Benzo(a)pyrene	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	%	98			70-130	Pass	
Benzo(g.h.i)perylene	%	90			70-130	Pass	
Benzo(k)fluoranthene	%	92			70-130	Pass	
Chrysene	%	93			70-130	Pass	
Dibenz(a.h)anthracene	%	91			70-130	Pass	
Fluoranthene	%	90			70-130	Pass	
Fluorene	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	96			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	110			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	100			70-130	Pass	
1.4-Dichlorobenzene	%	100			70-130	Pass	
2-Chlorophenol	%	113			30-130	Pass	
2-Methylnaphthalene	%	75			70-130	Pass	
2.4-Dinitrotoluene	%	100			70-130	Pass	
4-Chloro-3-methylphenol	%	113			30-130	Pass	
Acenaphthene	%	125			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthylene	%	86			70-130	Pass	
Anthracene	%	93			70-130	Pass	
Benz(a)anthracene	%	114			70-130	Pass	
Benzo(a)pyrene	%	95			70-130	Pass	
Benzo(b&j)fluoranthene	%	117			70-130	Pass	
Benzo(g.h.i)perylene	%	103			70-130	Pass	
Benzo(k)fluoranthene	%	106			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	100			70-130	Pass	
Fluoranthene	%	100			70-130	Pass	
Fluorene	%	90			70-130	Pass	
g-BHC (Lindane)	%	125			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	115			70-130	Pass	
N-Nitrosodipropylamine	%	100			70-130	Pass	
Naphthalene	%	81			70-130	Pass	
Pentachlorophenol	%	75			30-130	Pass	
Phenanthrene	%	99			70-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	100			70-130	Pass	
Chloride	%	99			70-130	Pass	
Conductivity (at 25°C)	%	103			70-130	Pass	
Nitrate (as N)	%	88			70-130	Pass	
Sulphate (as SO4)	%	103			70-130	Pass	
Sulphide (as S)	%	100			70-130	Pass	
Turbidity	%	124			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	%	81			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	105			70-130	Pass	
Magnesium	%	109			70-130	Pass	
Potassium	%	95			70-130	Pass	
Sodium	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	94			70-130	Pass	
Cadmium	%	89			70-130	Pass	
Chromium	%	92			70-130	Pass	
Copper	%	95			70-130	Pass	
Lead	%	96			70-130	Pass	
Mercury	%	100			70-130	Pass	
Nickel	%	95			70-130	Pass	
Zinc	%	93			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	S17-Ma02291	NCP	%	121			70-130	Pass	
TRH C10-C14	S17-Ma00561	NCP	%	109			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S17-Ma01520	NCP	%	101			70-130	Pass	
Toluene	S17-Ma01520	NCP	%	101			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Ethylbenzene	S17-Ma01520	NCP	%	105			70-130	Pass	
m&p-Xylenes	S17-Ma01520	NCP	%	106			70-130	Pass	
o-Xylene	S17-Ma01520	NCP	%	106			70-130	Pass	
Xylenes - Total	S17-Ma01520	NCP	%	106			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S17-Ma01520	NCP	%	113			70-130	Pass	
TRH C6-C10	S17-Ma02291	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Ma00561	NCP	%	104			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S17-Ma01582	CP	%	105			70-130	Pass	
Nitrate (as N)	M17-Ma08268	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Ma01520	NCP	%	94			70-130	Pass	
Cadmium	S17-Ma01520	NCP	%	90			70-130	Pass	
Chromium	S17-Ma01520	NCP	%	92			70-130	Pass	
Copper	S17-Ma01520	NCP	%	87			70-130	Pass	
Lead	S17-Ma01520	NCP	%	86			70-130	Pass	
Mercury	S17-Ma01520	NCP	%	89			70-130	Pass	
Nickel	S17-Ma01520	NCP	%	89			70-130	Pass	
Zinc	S17-Ma01520	NCP	%	99			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S17-Ma01583	CP	%	102			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S17-Ma01583	CP	%	81			70-130	Pass	
Magnesium	S17-Ma01583	CP	%	111			70-130	Pass	
Potassium	S17-Ma01583	CP	%	101			70-130	Pass	
Sodium	S17-Ma01583	CP	%	105			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	S17-Ma01519	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S17-Ma00525	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S17-Ma01519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S17-Ma01519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S17-Ma01519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S17-Ma01519	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S17-Ma01519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total	S17-Ma01519	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S17-Ma01519	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S17-Ma01519	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Ma00525	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S17-Ma01582	CP	mg/L	0.02	0.01	7.0	30%	Pass	
Chloride	S17-Ma01582	CP	mg/L	7.9	7.8	2.0	30%	Pass	
Conductivity (at 25°C)	S17-Ma02281	NCP	uS/cm	730	730	1.0	30%	Pass	
Nitrate (as N)	M17-Ma08268	NCP	mg/L	0.75	0.77	2.0	30%	Pass	
Sulphate (as SO4)	S17-Ma01582	CP	mg/L	53	53	<1	30%	Pass	
Sulphide (as S)	M17-Ma08673	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S17-Ma01582	CP	mg/L	50	49	3.0	30%	Pass	
Magnesium	S17-Ma01582	CP	mg/L	2.9	2.9	2.0	30%	Pass	
Potassium	S17-Ma01582	CP	mg/L	3.7	3.7	<1	30%	Pass	
Sodium	S17-Ma01582	CP	mg/L	10	10	1.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Ma01519	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	S17-Ma01519	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S17-Ma01519	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S17-Ma01519	NCP	mg/L	0.004	0.004	9.0	30%	Pass	
Zinc	S17-Ma01519	NCP	mg/L	0.043	0.036	18	30%	Pass	

Comments

This report has been revised to amend Dieldrin test results.

Sample Integrity

Custody Seals Intact (if used)	N/A
Attempt to Chill was evident	No
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

Authorised By

Nibha Vaidya	Analytical Services Manager
Huong Le	Senior Analyst-Inorganic (VIC)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)



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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Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Chris Bielby
Project name:	CHESTER HILL
Project ID:	52401
COC number:	Not provided
Turn around time:	1 Day
Date/Time received:	Mar 9, 2017 12:54 PM
Eurofins | mgt reference:	**536199**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 23 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

010121

CHAIN OF CUSTODY

PROJECT NO.: 52491
PROJECT NAME: CHESTER HILL
DATE NEEDED BY: STANDARD
LABORATORY BATCH NO.:
SAMPLERS: SM
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) smcvilly@jbsg.com.au; (3) chelby@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TPH/BTEX	METALS*	PAH	VOC	SVOC	EC	pH	TURBIDITY	TYPE OF ANALYSIS: LABORATORY	FIELD	NOTES:
15	WATER	1/3/2017		1PE_1SVOC / HCl/Ice/Amber		X	X	X	X	X	X	X				
17	↓	↓				↓	↓	↓	↓	↓	↓	↓				* TOTAL/DISSOLVED
7																

RELINQUISHED BY
NAME: SMcVilly DATE: 1/3/2017
OF: JBS&G

NAME: DATE:
OF:

METHOD OF SHIPMENT
CONSIGNMENT NOTE NO:
TRANSPORT CO:

CONSIGNMENT NOTE NO:
TRANSPORT CO:

RECEIVED BY
NAME: E.M.
DATE: 1/3/17
OF: EUROFINS

NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY
COOLER SEAL – Yes / No / Intact / Broken
COOLER TEMP ___ deg C
COOLER SEAL – Yes / No / Intact / Broken
COOLER TEMP ___ deg C

Container & Preservative Codes: P = Plastic, S = Soil Jar, B = Glass Bottle, N = Nitric Acid Prsvd, H = Sodium Hydroxide Prsvd, VC = Hydrochloric Acid Prsvd Vial, VS = Sulfuric Acid Prsvd Vial, S = Sulfuric Acid Prsvd, Z = Zinc Prsvd, E = EDTA Prsvd, ST = Sterile Bottle, O = Other

JBSG Forms/013 – Chain of Custody – Generic

536199

Eliane McCarthy

To: Nibha Vaidya
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 536199 : Site CHESTER HILL (52401)

From: Chris Bielby [mailto:CBielby@jbsg.com.au]
Sent: Thursday, 2 March 2017 12:51 PM
To: !AU04_CAU001_EnviroSampleNSW; Simon McVeigh; Nibha Vaidya
Subject: RE: Eurofins | mgt Sample Receipt Advice - Report 536199 : Site CHESTER HILL (52401)

Requesting the following additional analysis for all samples:
Major cations and anions
Sulphide
Turbidity
Ammonia
Nitrates
Regards
Chris

From: EnviroSampleNSW@eurofins.com [mailto:EnviroSampleNSW@eurofins.com]
Sent: Thursday, 2 March 2017 12:17 PM
To: Simon McVeigh <SMcVeigh@jbsg.com.au>
Cc: Chris Bielby <CBielby@jbsg.com.au>
Subject: Eurofins | mgt Sample Receipt Advice - Report 536199 : Site CHESTER HILL (52401)

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. Any samples that are received in our lab that have not been scheduled for testing will be charged a fee per sample to cover the supply of the container, handling, storage and disposal as detailed below.

Please send all reply correspondence to EnviroSampleNSW@eurofins.com noting the Eurofins Lab Reference in the subject header.

Kind regards

Eliane McCarthy

Sample Receipt
NSW Unit F3, Building F
16 Mars Road Lane Cove West, NSW 2066
T:(+61) (2) 9900 8492
F:(+61) (2) 9420 2977

536199
~~537151~~

Eliane McCarthy

From: Nibha Vaidya
Sent: Wednesday, 8 March 2017 4:31 PM
To: !AU04_CAU001_EnviroSampleNSW
Subject: 536199 - PAH LL

Can you add PAH as trace level please? Please let me know once done

Kind Regards,

Nibha Vaidya
Analytical Services Manager

Eurofins | mgt
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Phone : +61 2 9900 8415
Mobile : +61 499 900 805
Fax : +61 2 9420 2977

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

536199
~~537151~~

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **536902-W**
Project name CHESTER HILL
Project ID 52401
Received Date Mar 07, 2017

Client Sample ID			**7**	**15**	**17**	**T SPIKE**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Ma06866**	**S17-Ma06867**	**S17-Ma06868**	**S17-Ma06869**
Date Sampled			**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C10-C14	0.05	mg/L	< 0.05	0.44	0.46	-
TRH C15-C28	0.1	mg/L	< 0.1	0.8	0.5	-
TRH C29-C36	0.1	mg/L	< 0.1	0.6	0.1	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	1.84	1.06	-
BTEX						
Comments						R20
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	94
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	96
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	94
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	93
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	95
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	94
4-Bromofluorobenzene (surr.)	1	%	93	91	91	100
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	0.002	< 0.001	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	0.013	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	0.003	0.001	< 0.001	-

Client Sample ID			7	15	17	T SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Ma06866	S17-Ma06867	S17-Ma06868	S17-Ma06869
Date Sampled			Mar 07, 2017	Mar 07, 2017	Mar 07, 2017	Mar 07, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Styrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Toluene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Fluorobenzene (surr.)	1	%	76	75	74	-
4-Bromofluorobenzene (surr.)	1	%	93	91	91	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	0.37	0.40	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	0.37	0.40	-
TRH >C16-C34	0.1	mg/L	< 0.1	1.3	0.6	-
TRH >C34-C40	0.1	mg/L	< 0.1	0.3	< 0.1	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
1-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-

Client Sample ID			7	15	17	T SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Ma06866	S17-Ma06867	S17-Ma06868	S17-Ma06869
Date Sampled			Mar 07, 2017	Mar 07, 2017	Mar 07, 2017	Mar 07, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
1.2.3-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.4-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.3.5-Tetrachlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.2.4-Trichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.2.4.5-Tetrachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
1.3.5-Trichlorobenzene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
1.4-Dichlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chloronaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Methylnaphthalene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2-Naphthylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2-Nitroaniline	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2-Nitrophenol	0.005	mg/L	< 0.005	< 0.005	< 0.005	-
2-Picoline	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.3.4.6-Tetrachlorophenol	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
2.4-Dichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dimethylphenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
2.4.5-Trichlorophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
2.6-Dinitrotoluene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	0.010	< 0.006	-
3-Methylcholanthrene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
3.3'-Dichlorobenzidine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4-Aminobiphenyl	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Bromophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	< 0.01	-
4-Chlorophenyl phenyl ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4-Nitrophenol	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
4.4'-DDD	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDE	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
4.4'-DDT	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
7.12-Dimethylbenz(a)anthracene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
a-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Acetophenone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Aniline	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
b-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-

Client Sample ID			7	15	17	T SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins | mgt Sample No.			S17-Ma06866	S17-Ma06867	S17-Ma06868	S17-Ma06869
Date Sampled			Mar 07, 2017	Mar 07, 2017	Mar 07, 2017	Mar 07, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Benzyl chloride	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Bis(2-chloroethoxy)methane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-chloroisopropyl)ether	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Bis(2-ethylhexyl)phthalate	0.02	mg/L	< 0.02	< 0.02	< 0.02	-
Butyl benzyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
d-BHC	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-butyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Di-n-octyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.j)acridine	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenzofuran	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dieldrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethyl phthalate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Dimethylaminoazobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Diphenylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan I	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan II	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endosulfan sulphate	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin aldehyde	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Endrin ketone	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
g-BHC (Lindane)	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Heptachlor epoxide	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorobutadiene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Hexachlorocyclopentadiene	0.004	mg/L	< 0.004	< 0.004	< 0.004	-
Hexachloroethane	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Methoxychlor	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
N-Nitrosodibutylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosodipropylamine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
N-Nitrosopiperidine	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Nitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachloronitrobenzene	0.002	mg/L	< 0.002	< 0.002	< 0.002	-
Pentachlorophenol	0.01	mg/L	0.01	< 0.01	< 0.01	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol	0.003	mg/L	< 0.003	< 0.003	< 0.003	-
Pronamide	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Trifluralin	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Phenol-d6 (surr.)	1	%	34	30	30	-

Client Sample ID			7	15	17	T SPIKE
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Ma06866**	**S17-Ma06867**	**S17-Ma06868**	**S17-Ma06869**
Date Sampled			**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**
Test/Reference	LOR	Unit				
Semivolatile Organics						
Nitrobenzene-d5 (surr.)	1	%	53	69	78	-
2-Fluorobiphenyl (surr.)	1	%	56	64	76	-
Ammonia (as N)	0.01	mg/L	0.73	0.49	0.47	-
Chloride	1	mg/L	120	110	100	-
Conductivity (at 25°C)	1	uS/cm	1600	1900	1700	-
Nitrate (as N)	0.02	mg/L	0.45	0.04	< 0.02	-
pH	0.1	pH Units	6.7	6.7	7.1	-
Sulphate (as SO4)	2	mg/L	610	710	600	-
Sulphide (as S)	0.05	mg/L	< 0.05	0.60	< 0.05	-
Turbidity	1	NTU	170	1100	35	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	5	mg/L	190	400	200	-
Carbonate Alkalinity (as CaCO3)	5	mg/L	< 5	< 5	< 5	-
Alkali Metals						
Calcium	0.5	mg/L	200	440	260	-
Magnesium	0.5	mg/L	27	56	32	-
Potassium	0.5	mg/L	19	19	16	-
Sodium	0.5	mg/L	120	100	120	-
Heavy Metals						
Arsenic	0.001	mg/L	0.002	0.004	0.003	-
Arsenic (filtered)	0.001	mg/L	0.002	0.002	0.002	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Cadmium (filtered)	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.002	0.003	< 0.001	-
Chromium (filtered)	0.001	mg/L	0.001	< 0.001	< 0.001	-
Copper	0.001	mg/L	0.009	0.008	0.004	-
Copper (filtered)	0.001	mg/L	0.003	< 0.001	< 0.001	-
Lead	0.001	mg/L	< 0.001	0.009	0.002	-
Lead (filtered)	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Mercury (filtered)	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.005	0.008	0.006	-
Nickel (filtered)	0.001	mg/L	0.006	0.005	0.005	-
Zinc	0.005	mg/L	0.041	0.25	0.031	-
Zinc (filtered)	0.005	mg/L	0.019	0.013	0.011	-

Client Sample ID			T BLANK	7	15	17
Sample Matrix			**Water**	**Water (Trace)**	**Water (Trace)**	**Water (Trace)**
Eurofins | mgt Sample No.			**S17-Ma06870**	**S17-Ma06886**	**S17-Ma06887**	**S17-Ma06888**
Date Sampled			**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**	**Mar 07, 2017**
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	-	-	-

Client Sample ID			T BLANK	7	15	17
Sample Matrix			Water	Water (Trace)	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma06870	S17-Ma06886	S17-Ma06887	S17-Ma06888
Date Sampled			Mar 07, 2017	Mar 07, 2017	Mar 07, 2017	Mar 07, 2017
Test/Reference	LOR	Unit				
BTEX						
Xylenes - Total	0.003	mg/L	< 0.003	-	-	-
4-Bromofluorobenzene (surr.)	1	%	95	-	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Acenaphthylene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Anthracene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Benz(a)anthracene	0.00005	mg/L	-	0.00010	0.00030	0.00010
Benzo(a)pyrene	0.00001	mg/L	-	< 0.00001	0.00030	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00005	mg/L	-	0.00010	0.00040	0.00010
Benzo(g.h.i)perylene	0.00005	mg/L	-	< 0.00005	0.00020	< 0.00005
Benzo(k)fluoranthene	0.00005	mg/L	-	0.00010	0.00020	< 0.00005
Chrysene	0.00005	mg/L	-	0.00010	0.00030	< 0.00005
Dibenz(a.h)anthracene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Fluoranthene	0.00005	mg/L	-	0.00010	0.00040	< 0.00005
Fluorene	0.00005	mg/L	-	< 0.00005	< 0.00005	< 0.00005
Indeno(1.2.3-cd)pyrene	0.00005	mg/L	-	< 0.00005	0.00010	< 0.00005
Naphthalene	0.00005	mg/L	-	< 0.00005	0.00030	< 0.00005
Phenanthrene	0.00005	mg/L	-	< 0.00005	0.00020	< 0.00005
Pyrene	0.00005	mg/L	-	0.00010	0.00050	0.00010
Total PAH*	0.00005	mg/L	-	0.0006	0.0034	0.0003
2-Fluorobiphenyl (surr.)	1	%	-	51	61	69
p-Terphenyl-d14 (surr.)	1	%	-	57	73	67

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	Sydney	Mar 08, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 07, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Mar 08, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Sydney	Mar 07, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Sydney	Mar 07, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Sydney	Mar 08, 2017	7 Day
- Method: E007 Polyaromatic Hydrocarbons (PAH)			
Semivolatile Organics	Sydney	Mar 08, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Sydney	Mar 09, 2017	28 Day
- Method: LTM-INO-4030			
pH	Sydney	Mar 09, 2017	1 Day
- Method: LTM-GEN-7090 pH in water by ISE			
Sulphide (as S)	Melbourne	Mar 07, 2017	7 Day
- Method: APHA 4500-S C & D - Sulphide			
Turbidity	Sydney	Mar 09, 2017	2 Day
- Method: LTM-INO-4140 'Turbidity by Nephelometric Method'			
Metals M8	Sydney	Mar 07, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Metals M8 filtered	Sydney	Mar 07, 2017	28 Day
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Eurofins | mgt Suite B11			
Ammonia (as N)	Sydney	Mar 07, 2017	28 Day
- Method: E036/E050 Ammonia as N			
Chloride	Sydney	Mar 08, 2017	28 Day
- Method: E033 /E045 /E047 Chloride			
Nitrate (as N)	Melbourne	Mar 09, 2017	7 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Sulphate (as SO4)	Sydney	Mar 08, 2017	28 Day
- Method: E045 Sulphate			
Alkalinity (speciated)	Sydney	Mar 09, 2017	14 Days
- Method: E035 Alkalinity			
Alkali Metals	Sydney	Mar 07, 2017	180 Day
- Method: E022/E030 Unfiltered Cations in Water			

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Project ID: 52401

Order No.:
Report #: 536902
Phone: 02 8245 0300
Fax:

Received: Mar 7, 2017 5:10 PM
Due: Mar 9, 2017
Priority: 2 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Sulphide (as S)	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	Metals M8 filtered	BTEX	Eurofins | mgt Suite B11	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271								X						X			
Sydney Laboratory - NATA Site # 18217						X	X		X	X	X	X	X	X	X	X	X
Brisbane Laboratory - NATA Site # 20794																	
Perth Laboratory - NATA Site # 18217																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	7	Mar 07, 2017		Water	S17-Ma06866	X	X	X	X		X	X	X	X	X	X	X
2	15	Mar 07, 2017		Water	S17-Ma06867	X	X	X	X		X	X	X	X	X	X	X
3	17	Mar 07, 2017		Water	S17-Ma06868	X	X	X	X		X	X	X	X	X	X	X
4	T SPIKE	Mar 07, 2017		Water	S17-Ma06869								X				
5	T BLANK	Mar 07, 2017		Water	S17-Ma06870								X				
6	7	Mar 07, 2017		Water (Trace)	S17-Ma06886					X							
7	15	Mar 07, 2017		Water (Trace)	S17-Ma06887					X							
8	17	Mar 07, 2017		Water (Trace)	S17-Ma06888					X							
Test Counts						3	3	3	3	3	3	3	5	3	3	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00005			0.00005	Pass	
Acenaphthylene	mg/L	< 0.00005			0.00005	Pass	
Anthracene	mg/L	< 0.00005			0.00005	Pass	
Benz(a)anthracene	mg/L	< 0.00005			0.00005	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00005			0.00005	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Chrysene	mg/L	< 0.00005			0.00005	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00005			0.00005	Pass	
Fluoranthene	mg/L	< 0.00005			0.00005	Pass	
Fluorene	mg/L	< 0.00005			0.00005	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00005			0.00005	Pass	
Naphthalene	mg/L	< 0.00005			0.00005	Pass	
Phenanthrene	mg/L	< 0.00005			0.00005	Pass	
Pyrene	mg/L	< 0.00005			0.00005	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Semivolatile Organics							
2-Methyl-4.6-dinitrophenol	mg/L	< 0.005			0.005	Pass	
1-Chloronaphthalene	mg/L	< 0.005			0.005	Pass	
1-Naphthylamine	mg/L	< 0.002			0.002	Pass	
1.2-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.3-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.4-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.3.5-Tetrachlorobenzene	mg/L	< 0.001			0.001	Pass	
1.2.4-Trichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.2.4.5-Tetrachlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
1.3.5-Trichlorobenzene	mg/L	< 0.001			0.001	Pass	
1.4-Dichlorobenzene	mg/L	< 0.002			0.002	Pass	
2-Chloronaphthalene	mg/L	< 0.002			0.002	Pass	
2-Chlorophenol	mg/L	< 0.003			0.003	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-Methylnaphthalene	mg/L	< 0.002			0.002	Pass	
2-Methylphenol (o-Cresol)	mg/L	< 0.003			0.003	Pass	
2-Naphthylamine	mg/L	< 0.002			0.002	Pass	
2-Nitroaniline	mg/L	< 0.004			0.004	Pass	
2-Nitrophenol	mg/L	< 0.005			0.005	Pass	
2-Picoline	mg/L	< 0.001			0.001	Pass	
2.3.4.6-Tetrachlorophenol	mg/L	< 0.002			0.002	Pass	
2.4-Dichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dimethylphenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrophenol	mg/L	< 0.001			0.001	Pass	
2.4-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
2.4.5-Trichlorophenol	mg/L	< 0.001			0.001	Pass	
2.4.6-Trichlorophenol	mg/L	< 0.01			0.01	Pass	
2.6-Dichlorophenol	mg/L	< 0.003			0.003	Pass	
2.6-Dinitrotoluene	mg/L	< 0.004			0.004	Pass	
3&4-Methylphenol (m&p-Cresol)	mg/L	< 0.006			0.006	Pass	
3-Methylcholanthrene	mg/L	< 0.002			0.002	Pass	
3.3'-Dichlorobenzidine	mg/L	< 0.001			0.001	Pass	
4-Aminobiphenyl	mg/L	< 0.002			0.002	Pass	
4-Bromophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Chloro-3-methylphenol	mg/L	< 0.01			0.01	Pass	
4-Chlorophenyl phenyl ether	mg/L	< 0.002			0.002	Pass	
4-Nitrophenol	mg/L	< 0.001			0.001	Pass	
4.4'-DDD	mg/L	< 0.002			0.002	Pass	
4.4'-DDE	mg/L	< 0.002			0.002	Pass	
4.4'-DDT	mg/L	< 0.004			0.004	Pass	
7.12-Dimethylbenz(a)anthracene	mg/L	< 0.002			0.002	Pass	
a-BHC	mg/L	< 0.002			0.002	Pass	
Acenaphthene	mg/L	< 0.001			0.001	Pass	
Acenaphthylene	mg/L	< 0.001			0.001	Pass	
Acetophenone	mg/L	< 0.002			0.002	Pass	
Aldrin	mg/L	< 0.002			0.002	Pass	
Aniline	mg/L	< 0.002			0.002	Pass	
Anthracene	mg/L	< 0.001			0.001	Pass	
b-BHC	mg/L	< 0.002			0.002	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	
Benzyl chloride	mg/L	< 0.001			0.001	Pass	
Bis(2-chloroethoxy)methane	mg/L	< 0.002			0.002	Pass	
Bis(2-chloroisopropyl)ether	mg/L	< 0.002			0.002	Pass	
Bis(2-ethylhexyl)phthalate	mg/L	< 0.02			0.02	Pass	
Butyl benzyl phthalate	mg/L	< 0.002			0.002	Pass	
Chrysene	mg/L	< 0.001			0.001	Pass	
d-BHC	mg/L	< 0.002			0.002	Pass	
Di-n-butyl phthalate	mg/L	< 0.002			0.002	Pass	
Di-n-octyl phthalate	mg/L	< 0.002			0.002	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.001			0.001	Pass	
Dibenz(a.j)acridine	mg/L	< 0.001			0.001	Pass	
Dibenzofuran	mg/L	< 0.002			0.002	Pass	
Dieldrin	mg/L	< 0.002			0.002	Pass	
Diethyl phthalate	mg/L	< 0.002			0.002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dimethyl phthalate	mg/L	< 0.002			0.002	Pass	
Dimethylaminoazobenzene	mg/L	< 0.002			0.002	Pass	
Diphenylamine	mg/L	< 0.002			0.002	Pass	
Endosulfan I	mg/L	< 0.002			0.002	Pass	
Endosulfan II	mg/L	< 0.002			0.002	Pass	
Endosulfan sulphate	mg/L	< 0.002			0.002	Pass	
Endrin	mg/L	< 0.002			0.002	Pass	
Endrin aldehyde	mg/L	< 0.002			0.002	Pass	
Endrin ketone	mg/L	< 0.002			0.002	Pass	
Fluoranthene	mg/L	< 0.001			0.001	Pass	
Fluorene	mg/L	< 0.001			0.001	Pass	
g-BHC (Lindane)	mg/L	< 0.002			0.002	Pass	
Heptachlor	mg/L	< 0.002			0.002	Pass	
Heptachlor epoxide	mg/L	< 0.002			0.002	Pass	
Hexachlorobenzene	mg/L	< 0.002			0.002	Pass	
Hexachlorobutadiene	mg/L	< 0.002			0.002	Pass	
Hexachlorocyclopentadiene	mg/L	< 0.004			0.004	Pass	
Hexachloroethane	mg/L	< 0.002			0.002	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.001			0.001	Pass	
Methoxychlor	mg/L	< 0.001			0.001	Pass	
N-Nitrosodibutylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosodipropylamine	mg/L	< 0.002			0.002	Pass	
N-Nitrosopiperidine	mg/L	< 0.002			0.002	Pass	
Naphthalene	mg/L	< 0.001			0.001	Pass	
Nitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorobenzene	mg/L	< 0.002			0.002	Pass	
Pentachloronitrobenzene	mg/L	< 0.002			0.002	Pass	
Pentachlorophenol	mg/L	< 0.01			0.01	Pass	
Phenanthrene	mg/L	< 0.001			0.001	Pass	
Phenol	mg/L	< 0.003			0.003	Pass	
Pronamide	mg/L	< 0.001			0.001	Pass	
Pyrene	mg/L	< 0.001			0.001	Pass	
Trifluralin	mg/L	< 0.001			0.001	Pass	
Method Blank							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Conductivity (at 25°C)	uS/cm	< 1			1	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 2			2	Pass	
Sulphide (as S)	mg/L	< 0.05			0.05	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 5			5	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 5			5	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	
Sodium	mg/L	< 0.5			0.5	Pass	
Method Blank							
Heavy Metals							
Arsenic	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Arsenic (filtered)	mg/L	< 0.001			0.001	Pass	
Cadmium	mg/L	< 0.0002			0.0002	Pass	
Cadmium (filtered)	mg/L	< 0.0002			0.0002	Pass	
Chromium	mg/L	< 0.001			0.001	Pass	
Chromium (filtered)	mg/L	< 0.001			0.001	Pass	
Copper	mg/L	< 0.001			0.001	Pass	
Copper (filtered)	mg/L	< 0.001			0.001	Pass	
Lead	mg/L	< 0.001			0.001	Pass	
Lead (filtered)	mg/L	< 0.001			0.001	Pass	
Mercury	mg/L	< 0.0001			0.0001	Pass	
Mercury (filtered)	mg/L	< 0.0001			0.0001	Pass	
Nickel	mg/L	< 0.001			0.001	Pass	
Zinc	mg/L	< 0.005			0.005	Pass	
Zinc (filtered)	mg/L	< 0.005			0.005	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	93			70-130	Pass	
TRH C10-C14	%	111			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	94			70-130	Pass	
Toluene	%	98			70-130	Pass	
Ethylbenzene	%	92			70-130	Pass	
m&p-Xylenes	%	91			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total	%	91			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethane	%	93			70-130	Pass	
1.1-Dichloroethene	%	91			70-130	Pass	
1.1.1-Trichloroethane	%	99			70-130	Pass	
1.1.1.2-Tetrachloroethane	%	96			70-130	Pass	
1.1.2-Trichloroethane	%	101			70-130	Pass	
1.1.2.2-Tetrachloroethane	%	90			70-130	Pass	
1.2-Dibromoethane	%	101			70-130	Pass	
1.2-Dichlorobenzene	%	94			70-130	Pass	
1.2-Dichloroethane	%	96			70-130	Pass	
1.2-Dichloropropane	%	92			70-130	Pass	
1.2.3-Trichloropropane	%	95			70-130	Pass	
1.2.4-Trimethylbenzene	%	88			70-130	Pass	
1.3-Dichlorobenzene	%	94			70-130	Pass	
1.3-Dichloropropane	%	96			70-130	Pass	
1.3.5-Trimethylbenzene	%	89			70-130	Pass	
1.4-Dichlorobenzene	%	95			70-130	Pass	
2-Butanone (MEK)	%	101			70-130	Pass	
2-Propanone (Acetone)	%	104			70-130	Pass	
4-Chlorotoluene	%	93			70-130	Pass	
4-Methyl-2-pentanone (MIBK)	%	92			70-130	Pass	
Allyl chloride	%	81			70-130	Pass	
Bromobenzene	%	87			70-130	Pass	
Bromochloromethane	%	93			70-130	Pass	
Bromodichloromethane	%	97			70-130	Pass	
Bromoform	%	98			70-130	Pass	
Bromomethane	%	83			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Carbon disulfide	%	87			70-130	Pass	
Carbon Tetrachloride	%	97			70-130	Pass	
Chlorobenzene	%	97			70-130	Pass	
Chloroethane	%	86			70-130	Pass	
Chloroform	%	99			70-130	Pass	
Chloromethane	%	71			70-130	Pass	
cis-1.2-Dichloroethene	%	102			70-130	Pass	
cis-1.3-Dichloropropene	%	83			70-130	Pass	
Dibromochloromethane	%	100			70-130	Pass	
Dibromomethane	%	100			70-130	Pass	
Dichlorodifluoromethane	%	78			70-130	Pass	
Iodomethane	%	121			70-130	Pass	
Isopropyl benzene (Cumene)	%	93			70-130	Pass	
Methylene Chloride	%	87			70-130	Pass	
Styrene	%	93			70-130	Pass	
Tetrachloroethene	%	105			70-130	Pass	
trans-1.2-Dichloroethene	%	92			70-130	Pass	
trans-1.3-Dichloropropene	%	86			70-130	Pass	
Trichloroethene	%	106			70-130	Pass	
Trichlorofluoromethane	%	95			70-130	Pass	
Vinyl chloride	%	94			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	90			70-130	Pass	
TRH C6-C10	%	103			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	103			70-130	Pass	
Acenaphthylene	%	87			70-130	Pass	
Anthracene	%	86			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	93			70-130	Pass	
Benzo(b&j)fluoranthene	%	92			70-130	Pass	
Benzo(g.h.i)perylene	%	90			70-130	Pass	
Benzo(k)fluoranthene	%	90			70-130	Pass	
Chrysene	%	96			70-130	Pass	
Dibenz(a.h)anthracene	%	99			70-130	Pass	
Fluoranthene	%	90			70-130	Pass	
Fluorene	%	94			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	92			70-130	Pass	
Phenanthrene	%	100			70-130	Pass	
Pyrene	%	90			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	112			70-130	Pass	
LCS - % Recovery							
Semivolatile Organics							
1.2.4-Trichlorobenzene	%	100			70-130	Pass	
1.4-Dichlorobenzene	%	75			70-130	Pass	
2-Chlorophenol	%	88			30-130	Pass	
2-Methylnaphthalene	%	75			70-130	Pass	
2.4-Dinitrotoluene	%	75			70-130	Pass	
4-Chloro-3-methylphenol	%	88			30-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Acenaphthene	%	100			70-130	Pass	
g-BHC (Lindane)	%	125			70-130	Pass	
N-Nitrosodipropylamine	%	75			70-130	Pass	
Pentachlorophenol	%	75			30-130	Pass	
Pyrene	%	125			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	90			70-130	Pass	
Chloride	%	99			70-130	Pass	
Conductivity (at 25°C)	%	93			70-130	Pass	
Nitrate (as N)	%	92			70-130	Pass	
Sulphate (as SO4)	%	104			70-130	Pass	
Sulphide (as S)	%	100			70-130	Pass	
Turbidity	%	99			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	%	83			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	105			70-130	Pass	
Magnesium	%	109			70-130	Pass	
Potassium	%	95			70-130	Pass	
Sodium	%	101			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	92			70-130	Pass	
Cadmium	%	87			70-130	Pass	
Chromium	%	85			70-130	Pass	
Copper	%	90			70-130	Pass	
Lead	%	96			70-130	Pass	
Mercury	%	105			70-130	Pass	
Nickel	%	91			70-130	Pass	
Zinc	%	92			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 C10-C14	S17-Ma00561	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S17-Ma00561	NCP	%	104			70-130	Pass	
Spike - % Recovery									
				Result 1					
Ammonia (as N)	S17-Ma06866	CP	%	111			70-130	Pass	
Nitrate (as N)	M17-Ma08108	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S17-Ja15183	NCP	%	101			70-130	Pass	
Sodium	S17-Ja15183	NCP	%	92			70-130	Pass	
Spike - % Recovery									
				Result 1					
Chloride	S17-Ma06867	CP	%	110			70-130	Pass	
Sulphate (as SO4)	S17-Ma06867	CP	%	106			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Magnesium	S17-Ma06868	CP	%	77			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Potassium	S17-Ma06868	CP	%	88			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S17-Ma06868	CP	%	94			70-130	Pass	
Cadmium	S17-Ma06868	CP	%	87			70-130	Pass	
Chromium	S17-Ma06868	CP	%	85			70-130	Pass	
Copper	S17-Ma06868	CP	%	85			70-130	Pass	
Lead	S17-Ma06868	CP	%	87			70-130	Pass	
Mercury	S17-Ma06868	CP	%	94			70-130	Pass	
Nickel	S17-Ma06868	CP	%	86			70-130	Pass	
Zinc	S17-Ma06868	CP	%	87			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 C10-C14	S17-Ma00525	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S17-Ma00525	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S17-Ma00525	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	S17-Ma06866	CP	mg/L	0.73	0.74	1.0	30%	Pass	
Chloride	S17-Ma06866	CP	mg/L	120	120	1.0	30%	Pass	
Conductivity (at 25°C)	S17-Ma06864	NCP	uS/cm	650	650	<1	30%	Pass	
Nitrate (as N)	M17-Ma08108	NCP	mg/L	0.02	0.03	2.0	30%	Pass	
Sulphate (as SO4)	S17-Ma06866	CP	mg/L	610	620	1.0	30%	Pass	
Sulphide (as S)	M17-Ma08673	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Turbidity	S17-Ma06864	NCP	NTU	41	42	2.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Chromium	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	S17-Ma08441	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S17-Ma06867	CP	mg/L	440	430	3.0	30%	Pass	
Magnesium	S17-Ma06867	CP	mg/L	56	53	5.0	30%	Pass	
Potassium	S17-Ma06867	CP	mg/L	19	18	5.0	30%	Pass	
Sodium	S17-Ma06867	CP	mg/L	100	100	4.0	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S17-Ma06867	CP	mg/L	0.004	0.004	6.0	30%	Pass	
Cadmium	S17-Ma06867	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Mercury	S17-Ma06867	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S17-Ma06867	CP	mg/L	0.008	0.008	2.0	30%	Pass	
Zinc	S17-Ma06867	CP	mg/L	0.25	0.25	1.0	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
R20	This sample is a Trip Spike and therefore all results are reported as a percentage

Authorised By

Nibha Vaidya	Analytical Services Manager
Huong Le	Senior Analyst-Inorganic (VIC)
Ryan Hamilton	Senior Analyst-Inorganic (NSW)
Ryan Hamilton	Senior Analyst-Metal (NSW)
Ryan Hamilton	Senior Analyst-Organic (NSW)
Ryan Hamilton	Senior Analyst-Volatile (NSW)



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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Sample Receipt Advice

Company name:	**JBS & G Australia (NSW) P/L**
Contact name:	Chris Bielby
Project name:	CHESTER HILL
Project ID:	52401
COC number:	Not provided
Turn around time:	2 Day
Date/Time received:	Mar 7, 2017 5:10 PM
Eurofins | mgt reference:	**536902**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.7 degrees Celsius.

☑ 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.

☒ Some samples have been subcontracted.

N/A Custody Seals intact (if used).

Notes

NO UNPRESERVED RECEIVED FOR SAMPLE 17

Contact notes

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

Nibha Vaidya on Phone : +61 (2) 9900 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

010125

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: S2401
PROJECT NAME: Chester Hill
DATE NEEDED BY: 48 Hour

LABORATORY BATCH NO.:
SAMPLERS: SM
QC LEVEL: NEPM (2013)

PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688

SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) smeveggl@jbsg.com.au; (3) shelby@jbsg.com.au

COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TPH/BTEX	Metals	PAH	VOC	SVOC	eC	pH	Sulfides	Cations/Anions	Turbidity	Ammonia	Nitrates	BTEX	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
7	WATER	7/3/17		AMBER 3xVIAL x GREEN x 2x METHANOL		X	X	X	X	X	X	X	X	X	X	X	X	X			536907
15	↓	↓		↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓				
17	↓	↓		↓		↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓				
TS1/RB/Blank	↓	↓		HCl Plast														X			

NOTES: * Total & Dissolved -

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: [signature] DATE: 7/3/17	CONSIGNMENT NOTE NO.	NAME: [signature]	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	DATE: 7/3/17 5:10 pm	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: DATE:	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF:	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **537474-W**
Project name CHESTER HILL
Project ID 52401
Received Date Mar 10, 2017

Client Sample ID			**17**	**QA20160310**	**17**	**QA20160310**
Sample Matrix			**Water**	**Water**	**Water (Trace)**	**Water (Trace)**
Eurofins | mgt Sample No.			**S17-Ma11033**	**S17-Ma11034**	**S17-Ma11042**	**S17-Ma11043**
Date Sampled			**Mar 10, 2017**	**Mar 10, 2017**	**Mar 10, 2017**	**Mar 10, 2017**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	-	-
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	-	-
TRH C15-C28	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	-	-
TRH C10-36 (Total)	0.1	mg/L	< 0.1	< 0.1	-	-
BTEX						
Benzene	0.001	mg/L	< 0.001	< 0.001	-	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-	-
4-Bromofluorobenzene (surr.)	1	%	90	104	-	-
Volatile Organics						
1.1-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.1-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-	-
1.1.1-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.1.1.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.1.2-Trichloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.1.2.2-Tetrachloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.2-Dibromoethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.2-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-	-
1.2-Dichloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
1.2-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-	-
1.2.3-Trichloropropane	0.001	mg/L	< 0.001	< 0.001	-	-
1.2.4-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	-
1.3-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-	-
1.3-Dichloropropane	0.001	mg/L	< 0.001	< 0.001	-	-
1.3.5-Trimethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	-
1.4-Dichlorobenzene	0.001	mg/L	< 0.001	< 0.001	-	-
2-Butanone (MEK)	0.001	mg/L	< 0.001	< 0.001	-	-
2-Propanone (Acetone)	0.001	mg/L	< 0.001	< 0.001	-	-
4-Chlorotoluene	0.001	mg/L	< 0.001	< 0.001	-	-
4-Methyl-2-pentanone (MIBK)	0.001	mg/L	< 0.001	< 0.001	-	-
Allyl chloride	0.001	mg/L	< 0.001	< 0.001	-	-

Client Sample ID			17	QA20160310	17	QA20160310
Sample Matrix			Water	Water	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma11033	S17-Ma11034	S17-Ma11042	S17-Ma11043
Date Sampled			Mar 10, 2017	Mar 10, 2017	Mar 10, 2017	Mar 10, 2017
Test/Reference	LOR	Unit				
Volatile Organics						
Benzene	0.001	mg/L	< 0.001	< 0.001	-	-
Bromobenzene	0.001	mg/L	< 0.001	< 0.001	-	-
Bromochloromethane	0.001	mg/L	< 0.001	< 0.001	-	-
Bromodichloromethane	0.001	mg/L	< 0.001	< 0.001	-	-
Bromoform	0.001	mg/L	< 0.001	< 0.001	-	-
Bromomethane	0.001	mg/L	< 0.001	< 0.001	-	-
Carbon disulfide	0.001	mg/L	< 0.001	< 0.001	-	-
Carbon Tetrachloride	0.001	mg/L	< 0.001	< 0.001	-	-
Chlorobenzene	0.001	mg/L	< 0.001	< 0.001	-	-
Chloroethane	0.001	mg/L	< 0.001	< 0.001	-	-
Chloroform	0.005	mg/L	< 0.005	< 0.005	-	-
Chloromethane	0.001	mg/L	< 0.001	< 0.001	-	-
cis-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-	-
cis-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-	-
Dibromochloromethane	0.001	mg/L	< 0.001	< 0.001	-	-
Dibromomethane	0.001	mg/L	< 0.001	< 0.001	-	-
Dichlorodifluoromethane	0.001	mg/L	< 0.001	< 0.001	-	-
Ethylbenzene	0.001	mg/L	< 0.001	< 0.001	-	-
Iodomethane	0.001	mg/L	< 0.001	< 0.001	-	-
Isopropyl benzene (Cumene)	0.001	mg/L	< 0.001	< 0.001	-	-
m&p-Xylenes	0.002	mg/L	< 0.002	< 0.002	-	-
Methylene Chloride	0.001	mg/L	< 0.001	< 0.001	-	-
o-Xylene	0.001	mg/L	< 0.001	< 0.001	-	-
Styrene	0.001	mg/L	< 0.001	< 0.001	-	-
Tetrachloroethene	0.001	mg/L	< 0.001	< 0.001	-	-
Toluene	0.001	mg/L	< 0.001	< 0.001	-	-
trans-1.2-Dichloroethene	0.001	mg/L	< 0.001	< 0.001	-	-
trans-1.3-Dichloropropene	0.001	mg/L	< 0.001	< 0.001	-	-
Trichloroethene	0.001	mg/L	< 0.001	< 0.001	-	-
Trichlorofluoromethane	0.001	mg/L	< 0.001	< 0.001	-	-
Vinyl chloride	0.001	mg/L	< 0.001	< 0.001	-	-
Xylenes - Total	0.003	mg/L	< 0.003	< 0.003	-	-
Fluorobenzene (surr.)	1	%	84	97	-	-
4-Bromofluorobenzene (surr.)	1	%	90	104	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.01	mg/L	< 0.01	< 0.01	-	-
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05	< 0.05	-	-
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	-	-
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	-	-
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Acenaphthylene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Anthracene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Benz(a)anthracene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Benzo(a)pyrene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Benzo(g.h.i)perylene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Benzo(k)fluoranthene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Chrysene	0.00001	mg/L	-	-	< 0.00001	< 0.00001

Client Sample ID			17	QA20160310	17	QA20160310
Sample Matrix			Water	Water	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma11033	S17-Ma11034	S17-Ma11042	S17-Ma11043
Date Sampled			Mar 10, 2017	Mar 10, 2017	Mar 10, 2017	Mar 10, 2017
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Dibenz(a.h)anthracene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Fluoranthene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Fluorene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Naphthalene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Phenanthrene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Pyrene	0.00001	mg/L	-	-	< 0.00001	< 0.00001
Total PAH*	0.00001	mg/L	-	-	< 0.00001	< 0.00001
2-Fluorobiphenyl (surr.)	1	%	-	-	88	62
p-Terphenyl-d14 (surr.)	1	%	-	-	150	106
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	-	-
TRH >C16-C34	0.1	mg/L	< 0.1	< 0.1	-	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	-	-
Semivolatile Organics						
2-Methyl-4.6-dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
1-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
1-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	-	-
1.2-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3.4-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.3.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.4-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.2.4.5-Tetrachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.3-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.3.5-Trichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
1.4-Dichlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Chloronaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Chlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2-Methylnaphthalene	0.005	mg/L	< 0.005	< 0.005	-	-
2-Methylphenol (o-Cresol)	0.003	mg/L	< 0.003	< 0.003	-	-
2-Naphthylamine	0.005	mg/L	< 0.005	< 0.005	-	-
2-Nitroaniline	0.005	mg/L	< 0.005	< 0.005	-	-
2-Nitrophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2-Picoline	0.005	mg/L	< 0.005	< 0.005	-	-
2.3.4.6-Tetrachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dimethylphenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.4-Dinitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
2.4-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	-	-
2.4.5-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.4.6-Trichlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
2.6-Dichlorophenol	0.003	mg/L	< 0.003	< 0.003	-	-
2.6-Dinitrotoluene	0.005	mg/L	< 0.005	< 0.005	-	-
3&4-Methylphenol (m&p-Cresol)	0.006	mg/L	< 0.006	< 0.006	-	-
3-Methylcholanthrene	0.005	mg/L	< 0.005	< 0.005	-	-
3.3'-Dichlorobenzidine	0.005	mg/L	< 0.005	< 0.005	-	-
4-Aminobiphenyl	0.005	mg/L	< 0.005	< 0.005	-	-
4-Bromophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	-	-

Client Sample ID			17	QA20160310	17	QA20160310
Sample Matrix			Water	Water	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma11033	S17-Ma11034	S17-Ma11042	S17-Ma11043
Date Sampled			Mar 10, 2017	Mar 10, 2017	Mar 10, 2017	Mar 10, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
4-Chloro-3-methylphenol	0.01	mg/L	< 0.01	< 0.01	-	-
4-Chlorophenyl phenyl ether	0.005	mg/L	< 0.005	< 0.005	-	-
4-Nitrophenol	0.03	mg/L	< 0.03	< 0.03	-	-
4.4'-DDD	0.005	mg/L	< 0.005	< 0.005	-	-
4.4'-DDE	0.005	mg/L	< 0.005	< 0.005	-	-
4.4'-DDT	0.005	mg/L	< 0.005	< 0.005	-	-
7.12-Dimethylbenz(a)anthracene	0.005	mg/L	< 0.005	< 0.005	-	-
a-BHC	0.005	mg/L	< 0.005	< 0.005	-	-
Acenaphthene	0.00001	mg/L	< 0.001	< 0.001	-	-
Acenaphthylene	0.00001	mg/L	< 0.001	< 0.001	-	-
Acetophenone	0.005	mg/L	< 0.005	< 0.005	-	-
Aldrin	0.005	mg/L	< 0.005	< 0.005	-	-
Aniline	0.005	mg/L	< 0.005	< 0.005	-	-
Anthracene	0.00001	mg/L	< 0.001	< 0.001	-	-
b-BHC	0.005	mg/L	< 0.005	< 0.005	-	-
Benz(a)anthracene	0.00001	mg/L	< 0.001	< 0.001	-	-
Benzo(a)pyrene	0.00001	mg/L	< 0.0005	< 0.0005	-	-
Benzo(b&j)fluoranthene[N07]	0.00001	mg/L	< 0.001	< 0.001	-	-
Benzo(g.h.i)perylene	0.00001	mg/L	< 0.001	< 0.001	-	-
Benzo(k)fluoranthene	0.00001	mg/L	< 0.001	< 0.001	-	-
Benzyl chloride	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-chloroethoxy)methane	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-chloroisopropyl)ether	0.005	mg/L	< 0.005	< 0.005	-	-
Bis(2-ethylhexyl)phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Butyl benzyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Chrysene	0.00001	mg/L	< 0.001	< 0.001	-	-
d-BHC	0.005	mg/L	< 0.005	< 0.005	-	-
Di-n-butyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Di-n-octyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dibenz(a.h)anthracene	0.00001	mg/L	< 0.001	< 0.001	-	-
Dibenz(a.j)acridine	0.005	mg/L	< 0.005	< 0.005	-	-
Dibenzofuran	0.005	mg/L	< 0.005	< 0.005	-	-
Dieldrin	0.005	mg/L	< 0.005	< 0.005	-	-
Diethyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dimethyl phthalate	0.005	mg/L	< 0.005	< 0.005	-	-
Dimethylaminoazobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Diphenylamine	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan I	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan II	0.005	mg/L	< 0.005	< 0.005	-	-
Endosulfan sulphate	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin aldehyde	0.005	mg/L	< 0.005	< 0.005	-	-
Endrin ketone	0.005	mg/L	< 0.005	< 0.005	-	-
Fluoranthene	0.00001	mg/L	< 0.001	< 0.001	-	-
Fluorene	0.00001	mg/L	< 0.001	< 0.001	-	-
g-BHC (Lindane)	0.005	mg/L	< 0.005	< 0.005	-	-
Heptachlor	0.005	mg/L	< 0.005	< 0.005	-	-
Heptachlor epoxide	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-

Client Sample ID			17	QA20160310	17	QA20160310
Sample Matrix			Water	Water	Water (Trace)	Water (Trace)
Eurofins | mgt Sample No.			S17-Ma11033	S17-Ma11034	S17-Ma11042	S17-Ma11043
Date Sampled			Mar 10, 2017	Mar 10, 2017	Mar 10, 2017	Mar 10, 2017
Test/Reference	LOR	Unit				
Semivolatile Organics						
Hexachlorobutadiene	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachlorocyclopentadiene	0.005	mg/L	< 0.005	< 0.005	-	-
Hexachloroethane	0.005	mg/L	< 0.005	< 0.005	-	-
Indeno(1.2.3-cd)pyrene	0.00001	mg/L	< 0.001	< 0.001	-	-
Methoxychlor	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosodibutylamine	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosodipropylamine	0.005	mg/L	< 0.005	< 0.005	-	-
N-Nitrosopiperidine	0.005	mg/L	< 0.005	< 0.005	-	-
Naphthalene	0.00001	mg/L	< 0.001	< 0.001	-	-
Nitrobenzene	0.05	mg/L	< 0.05	< 0.05	-	-
Pentachlorobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Pentachloronitrobenzene	0.005	mg/L	< 0.005	< 0.005	-	-
Pentachlorophenol	0.01	mg/L	< 0.01	< 0.01	-	-
Phenanthrene	0.00001	mg/L	< 0.001	< 0.001	-	-
Phenol	0.003	mg/L	< 0.003	< 0.003	-	-
Pronamide	0.005	mg/L	< 0.005	< 0.005	-	-
Pyrene	0.00001	mg/L	< 0.001	< 0.001	-	-
Trifluralin	0.005	mg/L	< 0.005	< 0.005	-	-
Phenol-d6 (surr.)	1	%	36	28	-	-
Nitrobenzene-d5 (surr.)	1	%	61	58	-	-
2-Fluorobiphenyl (surr.)	1	%	67	62	-	-
2.4.6-Tribromophenol (surr.)	1	%	51	48	-	-
Ammonia (as N)	0.01	mg/L	0.21	0.21	-	-
Chloride	1	mg/L	55	54	-	-
Conductivity (at 25°C)	1	uS/cm	1000	1000	-	-
Nitrate (as N)	0.02	mg/L	0.17	0.18	-	-
pH	0.1	pH Units	7.9	7.9	-	-
Sulphate (as SO4)	5	mg/L	250	250	-	-
Sulphide (as S)	0.05	mg/L	< 0.05	< 0.05	-	-
Turbidity	1	NTU	40	98	-	-
Alkalinity (speciated)						
Bicarbonate Alkalinity (as CaCO3)	20	mg/L	230	220	-	-
Carbonate Alkalinity (as CaCO3)	10	mg/L	< 10	< 10	-	-
Alkali Metals						
Calcium	0.5	mg/L	130	140	-	-
Magnesium	0.5	mg/L	13	13	-	-
Potassium	0.5	mg/L	6.2	7.7	-	-
Sodium	0.5	mg/L	45	46	-	-
Heavy Metals						
Arsenic	0.001	mg/L	0.003	0.004	-	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	-	-
Chromium	0.001	mg/L	0.002	0.004	-	-
Copper	0.001	mg/L	0.007	0.012	-	-
Lead	0.001	mg/L	0.008	0.018	-	-
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	-	-
Nickel	0.001	mg/L	0.004	0.006	-	-
Zinc	0.005	mg/L	0.032	0.069	-	-

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	Melbourne	Mar 14, 2017	7 Day
- Method: TRH C6-C36 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 14, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Melbourne	Mar 14, 2017	7 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
BTEX	Melbourne	Mar 14, 2017	14 Day
- Method: TRH C6-C40 - LTM-ORG-2010			
Volatile Organics	Melbourne	Mar 14, 2017	7 Days
- Method: LTM-ORG-2150 VOCs in Soils Liquid and other Aqueous Matrices			
Polycyclic Aromatic Hydrocarbons	Melbourne	Mar 14, 2017	7 Day
- Method: USEPA 8270 Polycyclic Aromatic Hydrocarbons			
Semivolatile Organics	Melbourne	Mar 14, 2017	7 Day
- Method: USEPA 8270 Semivolatile Organics			
Conductivity (at 25°C)	Melbourne	Mar 14, 2017	28 Day
- Method: LTM-INO-4030			
pH	Melbourne	Mar 14, 2017	0 Hours
- Method: LTM-GEN-7090 pH in water by ISE			
Sulphide (as S)	Melbourne	Mar 14, 2017	7 Day
- Method: APHA 4500-S C & D - Sulphide			
Turbidity	Melbourne	Mar 14, 2017	2 Day
- Method: LTM-INO-4140 'Turbidity by Nephelometric Method'			
Metals M8	Melbourne	Mar 14, 2017	28 Days
- Method: LTM-MET-3040 Metals in Waters by ICP-MS			
Eurofins | mgt Suite B11			
Ammonia (as N)	Melbourne	Mar 14, 2017	28 Day
- Method: APHA 4500-NH3 Ammonia Nitrogen by FIA			
Chloride	Melbourne	Mar 14, 2017	28 Day
- Method: LTM-INO-4090 Chloride by Discrete Analyser			
Nitrate (as N)	Melbourne	Mar 14, 2017	7 Day
- Method: APHA 4500-NO3 Nitrate Nitrogen by FIA			
Sulphate (as SO4)	Melbourne	Mar 14, 2017	28 Day
- Method: LTM-INO-4110 Sulfate by Discrete Analyser			
Alkalinity (speciated)	Melbourne	Mar 14, 2017	14 Day
- Method: APHA 2320 Alkalinity by Titration			
Alkali Metals	Melbourne	Mar 14, 2017	180 Day
- Method: USEPA 6010 Alkali Metals			

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Project Name: CHESTER HILL
Project ID: 52401

Order No.:
Report #: 537474
Phone: 02 8245 0300
Fax:

Received: Mar 10, 2017 2:30 PM
Due: Mar 14, 2017
Priority: 2 Day
Contact Name: Chris Bielby

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Conductivity (at 25°C)	pH	Sulphide (as S)	Turbidity	Polycyclic Aromatic Hydrocarbons	Metals M8	BTEX	Eurofins | mgt Suite B11	Volatile Organics	Semivolatile Organics	Total Recoverable Hydrocarbons
Melbourne Laboratory - NATA Site # 1254 & 14271						X	X	X	X	X	X	X	X	X	X	X
Sydney Laboratory - NATA Site # 18217																
Brisbane Laboratory - NATA Site # 20794																
Perth Laboratory - NATA Site # 18217																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	17	Mar 10, 2017		Water	S17-Ma11033	X	X	X	X		X	X	X	X	X	X
2	QA20160310	Mar 10, 2017		Water	S17-Ma11034	X	X	X	X		X	X	X	X	X	X
3	17	Mar 10, 2017		Water (Trace)	S17-Ma11042					X						
4	QA20160310	Mar 10, 2017		Water (Trace)	S17-Ma11043					X						
Test Counts						2	2	2	2	2	2	2	2	2	2	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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

****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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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	
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	
Dibromomethane	mg/L	< 0.001			0.001	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dichlorodifluoromethane	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	
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	
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	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/L	< 0.00001			0.00001	Pass	
Acenaphthylene	mg/L	< 0.00001			0.00001	Pass	
Anthracene	mg/L	< 0.00001			0.00001	Pass	
Benz(a)anthracene	mg/L	< 0.00001			0.00001	Pass	
Benzo(a)pyrene	mg/L	< 0.00001			0.00001	Pass	
Benzo(b&j)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Benzo(g.h.i)perylene	mg/L	< 0.00001			0.00001	Pass	
Benzo(k)fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Chrysene	mg/L	< 0.00001			0.00001	Pass	
Dibenz(a.h)anthracene	mg/L	< 0.00001			0.00001	Pass	
Fluoranthene	mg/L	< 0.00001			0.00001	Pass	
Fluorene	mg/L	< 0.00001			0.00001	Pass	
Indeno(1.2.3-cd)pyrene	mg/L	< 0.00001			0.00001	Pass	
Naphthalene	mg/L	< 0.00001			0.00001	Pass	
Phenanthrene	mg/L	< 0.00001			0.00001	Pass	
Pyrene	mg/L	< 0.00001			0.00001	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
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							
Ammonia (as N)	mg/L	< 0.01			0.01	Pass	
Chloride	mg/L	< 1			1	Pass	
Nitrate (as N)	mg/L	< 0.02			0.02	Pass	
Sulphate (as SO4)	mg/L	< 5			5	Pass	
Sulphide (as S)	mg/L	< 0.05			0.05	Pass	
Turbidity	NTU	< 1			1	Pass	
Method Blank							
Alkalinity (speciated)							
Bicarbonate Alkalinity (as CaCO3)	mg/L	< 20			20	Pass	
Carbonate Alkalinity (as CaCO3)	mg/L	< 10			10	Pass	
Method Blank							
Alkali Metals							
Calcium	mg/L	< 0.5			0.5	Pass	
Magnesium	mg/L	< 0.5			0.5	Pass	
Potassium	mg/L	< 0.5			0.5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Sodium	mg/L	< 0.5			0.5	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							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	98			70-130	Pass	
TRH C10-C14	%	101			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	98			70-130	Pass	
Toluene	%	107			70-130	Pass	
Ethylbenzene	%	110			70-130	Pass	
m&p-Xylenes	%	111			70-130	Pass	
Xylenes - Total	%	111			70-130	Pass	
LCS - % Recovery							
Volatile Organics							
1.1-Dichloroethene	%	72			70-130	Pass	
1.1.1-Trichloroethane	%	124			70-130	Pass	
1.2-Dichlorobenzene	%	107			70-130	Pass	
1.2-Dichloroethane	%	107			70-130	Pass	
Trichloroethene	%	102			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	71			70-130	Pass	
TRH C6-C10	%	89			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	100			70-130	Pass	
LCS - % Recovery							
Ammonia (as N)	%	89			70-130	Pass	
Chloride	%	109			70-130	Pass	
Nitrate (as N)	%	93			70-130	Pass	
Sulphate (as SO4)	%	125			70-130	Pass	
Sulphide (as S)	%	100			70-130	Pass	
LCS - % Recovery							
Alkalinity (speciated)							
Carbonate Alkalinity (as CaCO3)	%	73			70-130	Pass	
LCS - % Recovery							
Alkali Metals							
Calcium	%	96			70-130	Pass	
Magnesium	%	100			70-130	Pass	
Potassium	%	95			70-130	Pass	
Sodium	%	95			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	120			80-120	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Cadmium			%	100			80-120	Pass	
Chromium			%	95			80-120	Pass	
Copper			%	101			80-120	Pass	
Lead			%	93			80-120	Pass	
Mercury			%	90			75-125	Pass	
Nickel			%	101			80-120	Pass	
Zinc			%	109			80-120	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Spike - % Recovery									
				Result 1					
Ammonia (as N)	M17-Ma10065	NCP	%	90			70-130	Pass	
Chloride	B17-Ma09574	NCP	%	89			70-130	Pass	
Nitrate (as N)	M17-Ma09568	NCP	%	93			70-130	Pass	
Sulphate (as SO4)	B17-Ma09574	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Alkali Metals				Result 1					
Calcium	S17-Ma11033	CP	%	103			70-130	Pass	
Magnesium	S17-Ma11033	CP	%	100			70-130	Pass	
Potassium	S17-Ma11033	CP	%	95			70-130	Pass	
Sodium	S17-Ma11033	CP	%	91			70-130	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Ammonia (as N)	M17-Ma10065	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
Chloride	B17-Ma09574	NCP	mg/L	82	83	1.1	30%	Pass	
Conductivity (at 25°C)	M17-Ma10968	NCP	uS/cm	99	99	<1	30%	Pass	
Nitrate (as N)	M17-Ma09568	NCP	mg/L	< 0.2	< 0.2	<1	30%	Pass	
pH	M17-Ma10968	NCP	pH Units	6.9	6.8	pass	30%	Pass	
Sulphate (as SO4)	B17-Ma09573	NCP	mg/L	44	45	1.7	30%	Pass	
Sulphide (as S)	B17-Ma12387	NCP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
Turbidity	B17-Ma10366	NCP	NTU	160	160	2.0	30%	Pass	
Duplicate									
Alkali Metals				Result 1	Result 2	RPD			
Calcium	S17-Ma11033	CP	mg/L	130	130	<1	30%	Pass	
Magnesium	S17-Ma11033	CP	mg/L	13	13	2.0	30%	Pass	
Potassium	S17-Ma11033	CP	mg/L	6.2	6.6	5.0	30%	Pass	
Sodium	S17-Ma11033	CP	mg/L	45	46	1.0	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

Authorised By

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Alex Petridis	Senior Analyst-Metal (VIC)
Alex Petridis	Senior Analyst-Organic (VIC)
Harry Bacalis	Senior Analyst-Volatile (VIC)
Huong Le	Senior Analyst-Inorganic (VIC)
Joseph Edouard	Senior Analyst-Organic (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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Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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1/21 Smallwood Place
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NATA # 1261 Site # 18217

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Chris Bielby
Project name: CHESTER HILL
Project ID: 52401
COC number: Not provided
Turn around time: 2 Day
Date/Time received: Mar 10, 2017 2:30 PM
Eurofins | mgt reference: **537474**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.5 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

010126

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [redacted] 52401
PROJECT NAME: CHESTER HILL
DATE NEEDED BY: 48 HOURS
LABORATORY BATCH NO.:
SAMPLERS: SM
QC LEVEL: NEPM (2013)
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....smcveigh.....@jbsg.com.au; (3) .....cbuilding.....@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	METALS	PAH's/Phenol	VOC	SVOC	EC	pH	Sulphate	Chlorides/Anions	Ferrous Iron	Ammonia	Nitrates	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA	NOTES:
17	WATER	10-3-17		AMBER & SOLVENT RINSED AMBER + METALS + PRESERVED		X	X	X	X	X	X	X	X	X	X	X	X			537474
QA20160310	↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓			
QC20160310																				END TO ENVIROLAB

RELINQUISHED BY:
NAME: SMcveigh DATE: 7/3/17
OF: JBS&G
NAME: DATE:
OF:

METHOD OF SHIPMENT:
CONSIGNMENT NOTE NO.
TRANSPORT CO.
CONSIGNMENT NOTE NO.
TRANSPORT CO

RECEIVED BY:
NAME: E.H.
DATE: 14:30 10/3/17
OF: EUROFINS
NAME: DATE:
OF:

FOR RECEIVING LAB USE ONLY:
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C
COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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

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

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

CERTIFICATE OF ANALYSIS 163394

Client:

JBS & G (NSW & WA) Pty Ltd
Level 1, 50 Margaret St
Sydney
NSW 2000

Attention: S McVeigh, C Bielby

Sample log in details:

Your Reference:	**52401, Chester Hill**		
No. of samples:	1 water		
Date samples received / completed instructions received	13/03/17	/	13/03/17

Analysis Details:

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

Report Details:

Date results requested by: / Issue Date:	15/03/17	/	15/03/17
Date of Preliminary Report:	Not Issued		

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

Results Approved By:

David Springer
General Manager

vTRH(C6-C10)/BTEXN in Water		
Our Reference:	UNITS	163394-1
Your Reference	---------- -	QC20170310
Date Sampled	----------	10/03/2017
Type of sample		Water
Date extracted	-	13/03/2017
Date analysed	-	14/03/2017
TRHC$_6$ - C$_9$	µg/L	<10
TRHC$_6$ - C$_{10}$	µg/L	<10
TRHC$_6$ - C$_{10}$ less BTEX (F1)	µg/L	<10
Benzene	µg/L	<1
Toluene	µg/L	<1
Ethylbenzene	µg/L	<1
m+p-xylene	µg/L	<2
o-xylene	µg/L	<1
Naphthalene	µg/L	<1
Surrogate Dibromofluoromethane	%	117
Surrogate toluene-d8	%	103
Surrogate 4-BFB	%	86

svTRH (C10-C40) in Water		
Our Reference:	UNITS	163394-1
Your Reference	----------	QC20170310
	-	
Date Sampled	----------	10/03/2017
Type of sample		Water
Date extracted	-	14/03/2017
Date analysed	-	14/03/2017
$TRHC_{10}$ - C_{14}	µg/L	<50
$TRHC_{15}$ - C_{28}	µg/L	<100
$TRHC_{29}$ - C_{36}	µg/L	<100
$TRH>C_{10}$ - C_{16}	µg/L	<50
$TRH>C_{10}$ - C_{16} less Naphthalene (F2)	µg/L	<50
$TRH>C_{16}$ - C_{34}	µg/L	<100
$TRH>C_{34}$ - C_{40}	µg/L	<100
Surrogate o-Terphenyl	%	80

VOCs in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- - ---------- 	 163394-1 QC20170310 10/03/2017 Water
Date extracted	-	13/03/2017
Date analysed	-	14/03/2017
Dichlorodifluoromethane	µg/L	<10
Chloromethane	µg/L	<10
Vinyl Chloride	µg/L	<10
Bromomethane	µg/L	<10
Chloroethane	µg/L	<10
Trichlorofluoromethane	µg/L	<10
1,1-Dichloroethene	µg/L	<1
Trans-1,2-dichloroethene	µg/L	<1
1,1-dichloroethane	µg/L	<1
Cis-1,2-dichloroethene	µg/L	<1
Bromochloromethane	µg/L	<1
Chloroform	µg/L	<1
2,2-dichloropropane	µg/L	<1
1,2-dichloroethane	µg/L	<1
1,1,1-trichloroethane	µg/L	<1
1,1-dichloropropene	µg/L	<1
Cyclohexane	µg/L	<1
Carbon tetrachloride	µg/L	<1
Benzene	µg/L	<1
Dibromomethane	µg/L	<1
1,2-dichloropropane	µg/L	<1
Trichloroethene	µg/L	<1
Bromodichloromethane	µg/L	<1
trans-1,3-dichloropropene	µg/L	<1
cis-1,3-dichloropropene	µg/L	<1
1,1,2-trichloroethane	µg/L	<1
Toluene	µg/L	<1
1,3-dichloropropane	µg/L	<1
Dibromochloromethane	µg/L	<1
1,2-dibromoethane	µg/L	<1
Tetrachloroethene	µg/L	<1
1,1,1,2-tetrachloroethane	µg/L	<1
Chlorobenzene	µg/L	<1
Ethylbenzene	µg/L	<1
Bromoform	µg/L	<1
m+p-xylene	µg/L	<2
Styrene	µg/L	<1
1,1,2,2-tetrachloroethane	µg/L	<1
o-xylene	µg/L	<1
1,2,3-trichloropropane	µg/L	<1

VOCs in water		
Our Reference:	UNITS	163394-1
Your Reference	---------- -	QC20170310
Date Sampled	----------	10/03/2017
Type of sample		Water
Isopropylbenzene	µg/L	<1
Bromobenzene	µg/L	<1
n-propyl benzene	µg/L	<1
2-chlorotoluene	µg/L	<1
4-chlorotoluene	µg/L	<1
1,3,5-trimethyl benzene	µg/L	<1
Tert-butyl benzene	µg/L	<1
1,2,4-trimethyl benzene	µg/L	<1
1,3-dichlorobenzene	µg/L	<1
Sec-butyl benzene	µg/L	<1
1,4-dichlorobenzene	µg/L	<1
4-isopropyl toluene	µg/L	<1
1,2-dichlorobenzene	µg/L	<1
n-butyl benzene	µg/L	<1
1,2-dibromo-3-chloropropane	µg/L	<1
1,2,4-trichlorobenzene	µg/L	<1
Hexachlorobutadiene	µg/L	<1
1,2,3-trichlorobenzene	µg/L	<1
Surrogate Dibromofluoromethane	%	117
Surrogate toluene-d8	%	103
Surrogate 4-BFB	%	86

SVOC's in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- - ---------- 	 163394-1 QC20170310 10/03/2017 Water
Date extracted	-	14/03/2017
Date analysed	-	14/03/2017
Phenol	µg/L	<2
Bis (2-chloroethyl) ether	µg/L	<5
2-Chlorophenol	µg/L	<2
1,3-Dichlorobenzene	µg/L	<2
1,4-Dichlorobenzene	µg/L	<2
2-Methylphenol	µg/L	<2
1,2-Dichlorobenzene	µg/L	<2
bis-(2-Chloroisopropyl) ether	µg/L	<5
3/4-Methylphenol	µg/L	<4
N-nitrosodi-n-propylamine	µg/L	<5
Hexachloroethane	µg/L	<2
Nitrobenzene	µg/L	<5
Isophorone	µg/L	<5
2,4-Dimethylphenol	µg/L	<2
2-Nitrophenol	µg/L	<2
bis (2-Chloroethoxy) methane	µg/L	<5
2,4-Dichlorophenol	µg/L	<2
1,2,4-Trichlorobenzene	µg/L	<2
Naphthalene	µg/L	<2
4-Chloroaniline	µg/L	<5
4-Chloro-3-methylphenol	µg/L	<10
Hexachlorobutadiene	µg/L	<2
2-Methylnaphthalene	µg/L	<2
Hexachlorocyclopentadiene	µg/L	<5
2,4,6-Trichlorophenol	µg/L	<2
2,4,5-Trichlorophenol	µg/L	<2
2-Chloronaphthalene	µg/L	<2
2-Nitroaniline	µg/L	<5
Dimethyl phthalate	µg/L	<10
2,6-Dinitrotoluene	µg/L	<5
Acenaphthylene	µg/L	<2
3-Nitroaniline	µg/L	<5
Acenaphthene	µg/L	<2
2,4-Dinitrophenol	µg/L	<20
4-Nitrophenol	µg/L	<20
Dibenzofuran	µg/L	<5
Diethylphthalate	µg/L	<10
4-Chlorophenylphenylether	µg/L	<5
4-Nitroaniline	µg/L	<5
Fluorene	µg/L	<2

SVOC's in water Our Reference: Your Reference Date Sampled Type of sample	UNITS ---------- - ---------- 	163394-1 QC20170310 10/03/2017 Water
2-methyl-4,6-dinitrophenol	µg/L	<20
Azobenzene	µg/L	<5
4-Bromophenylphenylether	µg/L	<5
Hexachlorobenzene	µg/L	<2
Pentachlorophenol	µg/L	<10
Phenanthrene	µg/L	<2
Anthracene	µg/L	<2
Carbazole	µg/L	<5
Di-n-butylphthalate	µg/L	<10
Fluoranthene	µg/L	<2
Pyrene	µg/L	<2
Butylbenzylphthalate	µg/L	<10
Bis(2-ethylhexyl) phthalate	µg/L	<10
Benzo(a)anthracene	µg/L	<2
Chrysene	µg/L	<2
Di-n-octylphthalate	µg/L	<10
Benzo(b,j+k)fluoranthene	µg/L	<4
Benzo(a)pyrene	µg/L	<2
Indeno(1,2,3-c,d)pyrene	µg/L	<2
Dibenzo(a,h)anthracene	µg/L	<2
Benzo(g,h,i)perylene	µg/L	<2
Ethylmethanesulfonate	µg/L	<5
Aniline	µg/L	<5
Pentachloroethane	µg/L	<2
Benzyl alcohol	µg/L	<5
Acetophenone	µg/L	<5
N-nitrosomorpholine	µg/L	<5
N-nitrosopiperidine	µg/L	<5
2,6-Dichlorophenol	µg/L	<2
Hexachloropropene-1	µg/L	<2
N-nitroso-n-butylamine	µg/L	<5
Safrole	µg/L	<5
1,2,4,5-Tetrachlorobenzene	µg/L	<2
Trans/Cis-iso-safrole	µg/L	<5
1,3-Dinitrobenzene	µg/L	<5
Pentachlorobenzene	µg/L	<2
1-Naphthylamine	µg/L	<5
2,3,4,6-Tetrachlorophenol	µg/L	<2
2-Naphthylamine	µg/L	<5
5-Nitro-o-toluidine	µg/L	<5
Diphenylamine	µg/L	<5
Phenacetin	µg/L	<5

SVOC's in water		
Our Reference:	UNITS	163394-1
Your Reference	---------- -	QC20170310
Date Sampled	----------	10/03/2017
Type of sample		Water
Pentachloronitrobenzene	µg/L	<5
Dinoseb	µg/L	<10
Methapyrilene	µg/L	<10
p-Dimethylaminoazobenzene	µg/L	<5
2-Acetylaminofluorene	µg/L	<2
7,12-Dimethylbenz(a)anthracene	µg/L	<2
3-Methylcholanthrene	µg/L	<2
a-BHC	µg/L	<2
b-BHC	µg/L	<2
g-BHC	µg/L	<2
d-BHC	µg/L	<2
Heptachlor	µg/L	<2
Aldrin	µg/L	<2
Heptachlor Epoxide	µg/L	<2
g-Chlordane	µg/L	<2
a-Chlordane	µg/L	<2
Endosulfan I	µg/L	<2
p,p'-DDE	µg/L	<2
Dieldrin	µg/L	<2
Endrin	µg/L	<2
p,p'-DDD	µg/L	<2
Endosulfan II	µg/L	<2
Endrin Aldehyde	µg/L	<2
p,p'-DDT	µg/L	<2
Endosulfan Sulphate	µg/L	<2
Endrin Ketone	µg/L	<2
Methoxychlor	µg/L	<2
Surrogate 2-fluorophenol	%	38
Surrogate Phenol-d_6	%	20
Surrogate Nitrobenzene-d_5	%	64
Surrogate 2-fluorobiphenyl	%	48
Surrogate 2,4,6-Tribromophenol	%	106
Surrogate p-Terphenyl-d_{14}	%	83

PAHs in Water - Low Level		
Our Reference:	UNITS	163394-1
Your Reference	----------	QC20170310
	-	
Date Sampled	----------	10/03/2017
Type of sample		Water
Date extracted	-	14/03/2017
Date analysed	-	14/03/2017
Naphthalene	µg/L	<0.2
Acenaphthylene	µg/L	<0.1
Acenaphthene	µg/L	<0.1
Fluorene	µg/L	<0.1
Phenanthrene	µg/L	<0.1
Anthracene	µg/L	<0.1
Fluoranthene	µg/L	<0.1
Pyrene	µg/L	<0.1
Benzo(a)anthracene	µg/L	<0.1
Chrysene	µg/L	<0.1
Benzo(b,j+k)fluoranthene	µg/L	<0.2
Benzo(a)pyrene	µg/L	<0.1
Indeno(1,2,3-c,d)pyrene	µg/L	<0.1
Dibenzo(a,h)anthracene	µg/L	<0.1
Benzo(g,h,i)perylene	µg/L	<0.1
Benzo(a)pyrene TEQ	µg/L	<0.5
Total +ve PAH's	µg/L	NIL (+)VE
Surrogate p-Terphenyl-d14	%	84

HM in water - dissolved		
Our Reference:	UNITS	163394-1
Your Reference	----------	QC20170310
	-	
Date Sampled	----------	10/03/2017
Type of sample		Water
Date prepared	-	14/03/2017
Date analysed	-	14/03/2017
Arsenic-Dissolved	µg/L	2
Cadmium-Dissolved	µg/L	<0.1
Chromium-Dissolved	µg/L	<1
Copper-Dissolved	µg/L	1
Lead-Dissolved	µg/L	<1
Mercury-Dissolved	µg/L	<0.05
Nickel-Dissolved	µg/L	2
Zinc-Dissolved	µg/L	5

Miscellaneous Inorganics		
Our Reference:	UNITS	163394-1
Your Reference	---------- -	QC20170310
Date Sampled	----------	10/03/2017
Type of sample		Water
Date prepared	-	13/03/2017
Date analysed	-	13/03/2017
pH	pH Units	7.8
Electrical Conductivity	µS/cm	920
Turbidity	NTU	65
Ammonia as N in water	mg/L	0.20
Nitrate as N in water	mg/L	0.16
Sulphide	mg/L	<0.5

Ion Balance		
Our Reference:	UNITS	163394-1
Your Reference	---------- -	QC20170310
Date Sampled	----------	10/03/2017
Type of sample		Water
Date prepared	-	13/03/2017
Date analysed	-	13/03/2017
Calcium - Dissolved	mg/L	140
Potassium - Dissolved	mg/L	8.4
Sodium - Dissolved	mg/L	48
Magnesium - Dissolved	mg/L	14
Hydroxide Alkalinity (OH^-) as $CaCO_3$	mg/L	<5
Bicarbonate Alkalinity as $CaCO_3$	mg/L	220
Carbonate Alkalinity as $CaCO_3$	mg/L	<5
Total Alkalinity as $CaCO_3$	mg/L	220
Sulphate, SO4	mg/L	200
Chloride, Cl	mg/L	40
Ionic Balance	%	4.6

Method ID	Methodology Summary
Org-016	Soil samples are extracted with methanol and spiked into water prior to analysing by purge and trap GC-MS. Water samples are analysed directly by purge and trap GC-MS. F1 = (C6-C10)-BTEX as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater.
Org-013	Water samples are analysed directly by purge and trap GC-MS.
Org-003	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-FID. F2 = (>C10-C16)-Naphthalene as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater (HSLs Tables 1A (3, 4)). Note Naphthalene is determined from the VOC analysis.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS.
Org-012	Soil samples are extracted with Dichloromethane/Acetone and waters with Dichloromethane and analysed by GC-MS. Benzo(a)pyrene TEQ as per NEPM B1 Guideline on Investigation Levels for Soil and Groundwater - 2013.
Metals-022	Determination of various metals by ICP-MS.
Metals-021	Determination of Mercury by Cold Vapour AAS.
Inorg-001	pH - Measured using pH meter and electrode in accordance with APHA latest edition, 4500-H+. Please note that the results for water analyses are indicative only, as analysis outside of the APHA storage times.
Inorg-002	Conductivity and Salinity - measured using a conductivity cell at 25°C in accordance with APHA latest edition 2510 and Rayment & Lyons.
Inorg-022	Turbidity - measured nephelometrically using a turbidimeter, in accordance with APHA latest edition, 2130-B.
Inorg-057	Ammonia - determined colourimetrically, based on APHA latest edition 4500-NH3 F. Soils are analysed following a KCl extraction.
Inorg-055	Nitrate - determined colourimetrically. Soils are analysed following a water extraction.
Inorg-051	Sulphide determined titrimetrically based on APHA latest edition 4500 S2- F.
Metals-020	Determination of various metals by ICP-AES.
Inorg-006	Alkalinity - determined titrimetrically in accordance with APHA latest edition, 2320-B.
Inorg-081	Anions - a range of Anions are determined by Ion Chromatography, in accordance with APHA latest edition, 4110-B. Alternatively determined by colourimetry/turbidity using Discrete Analyer.
Inorg-040	The concentrations of the major ions (mg/L) are converted to milliequivalents and summed. The ionic balance should be within +/- 10% ie total anions = total cations +/-10%.

QUALITY CONTROL vTRH(C6-C10)/BTEXN in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/03/2017	[NT]	[NT]	LCS-W1	13/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
TRH C_6 - C_9	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	105%
TRH C_6 - C_{10}	µg/L	10	Org-016	<10	[NT]	[NT]	LCS-W1	105%
Benzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	116%
Toluene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	104%
Ethylbenzene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	99%
m+p-xylene	µg/L	2	Org-016	<2	[NT]	[NT]	LCS-W1	103%
o-xylene	µg/L	1	Org-016	<1	[NT]	[NT]	LCS-W1	109%
Naphthalene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-016	124	[NT]	[NT]	LCS-W1	105%
Surrogate toluene-d8	%		Org-016	94	[NT]	[NT]	LCS-W1	103%
Surrogate 4-BFB	%		Org-016	82	[NT]	[NT]	LCS-W1	108%
QUALITY CONTROL svTRH (C10-C40) in Water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			14/03/2017	[NT]	[NT]	LCS-W2	14/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W2	14/03/2017
TRH C_{10} - C_{14}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	116%
TRH C_{15} - C_{28}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	109%
TRH C_{29} - C_{36}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	117%
TRH>C_{10} - C_{16}	µg/L	50	Org-003	<50	[NT]	[NT]	LCS-W2	116%
TRH>C_{16} - C_{34}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	109%
TRH>C_{34} - C_{40}	µg/L	100	Org-003	<100	[NT]	[NT]	LCS-W2	117%
Surrogate o-Terphenyl	%		Org-003	95	[NT]	[NT]	LCS-W2	109%
QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			13/03/2017	[NT]	[NT]	LCS-W1	13/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Dichlorodifluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Vinyl Chloride	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Bromomethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Chloroethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
Trichlorofluoromethane	µg/L	10	Org-013	<10	[NT]	[NT]	[NR]	[NR]
1,1-Dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trans-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
1,1-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	118%
Cis-1,2-dichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chloroform	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	122%
2,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	115%
1,1,1-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	119%
1,1-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Cyclohexane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Carbon tetrachloride	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromomethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Trichloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	113%
Bromodichloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	121%
trans-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
cis-1,3-dichloropropene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2-trichloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Dibromochloromethane	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	117%
1,2-dibromoethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tetrachloroethene	µg/L	1	Org-013	<1	[NT]	[NT]	LCS-W1	110%
1,1,1,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Chlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Ethylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromoform	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
m+p-xylene	µg/L	2	Org-013	<2	[NT]	[NT]	[NR]	[NR]
Styrene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,1,2,2-tetrachloroethane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
o-xylene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Isopropylbenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Bromobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-propyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
2-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
4-chlorotoluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3,5-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Tert-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trimethyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,3-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Sec-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,4-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL VOCs in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
4-isopropyl toluene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
n-butyl benzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2-dibromo-3-chloropropane	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,4-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
1,2,3-trichlorobenzene	µg/L	1	Org-013	<1	[NT]	[NT]	[NR]	[NR]
Surrogate Dibromofluoromethane	%		Org-013	124	[NT]	[NT]	LCS-W1	105%
Surrogate toluene-d8	%		Org-013	94	[NT]	[NT]	LCS-W1	103%
Surrogate 4-BFB	%		Org-013	82	[NT]	[NT]	LCS-W1	108%
QUALITY CONTROL SVOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Phenol	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	30%
Bis (2-chloroethyl) ether	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2-Chlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	103%
1,3-Dichlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
1,4-Dichlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	87%
2-Methylphenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
1,2-Dichlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
bis-(2-Chloroisopropyl) ether	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
3/4-Methylphenol	µg/L	4	Org-012	<4	[NT]	[NT]	[NR]	[NR]
N-nitrosodi-n-propylamine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Hexachloroethane	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Nitrobenzene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Isophorone	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2,4-Dimethylphenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-Nitrophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
bis (2-Chloroethoxy) methane	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2,4-Dichlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
1,2,4-Trichlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Naphthalene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
4-Chloroaniline	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
4-Chloro-3-methylphenol	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Hexachlorobutadiene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-Methylnaphthalene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Hexachlorocyclopentadiene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL SVOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
2,4,6-Trichlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2,4,5-Trichlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-Chloronaphthalene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-Nitroaniline	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Dimethyl phthalate	µg/L	10	Org-012	<10	[NT]	[NT]	LCS-W1	112%
2,6-Dinitrotoluene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Acenaphthylene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
3-Nitroaniline	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	112%
2,4-Dinitrophenol	µg/L	20	Org-012	<20	[NT]	[NT]	[NR]	[NR]
4-Nitrophenol	µg/L	20	Org-012	<20	[NT]	[NT]	LCS-W1	40%
Dibenzofuran	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Diethylphthalate	µg/L	10	Org-012	<10	[NT]	[NT]	LCS-W1	121%
4-Chlorophenylphenylether	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
4-Nitroaniline	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-methyl-4,6-dinitrophenol	µg/L	20	Org-012	<20	[NT]	[NT]	[NR]	[NR]
Azobenzene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
4-Bromophenylphenylether	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Hexachlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Pentachlorophenol	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Phenanthrene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Anthracene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Carbazole	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Di-n-butylphthalate	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Pyrene	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	124%
Butylbenzylphthalate	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Bis(2-ethylhexyl) phthalate	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Benzo(a)anthracene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Di-n-octylphthalate	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Benzo(b,j +k)fluoranthene	µg/L	4	Org-012	<4	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Indeno(1,2,3-c,d)pyrene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Ethylmethanesulfonate	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Aniline	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Pentachloroethane	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Benzyl alcohol	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Acetophenone	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL SVOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
N-nitrosomorpholine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
N-nitrosopiperidine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2,6-Dichlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Hexachloropropene-1	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
N-nitroso-n-butylamine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Safrole	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
1,2,4,5-Tetrachlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Trans/Cis-iso-safrole	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
1,3-Dinitrobenzene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Pentachlorobenzene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
1-Naphthylamine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2,3,4,6-Tetrachlorophenol	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
2-Naphthylamine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
5-Nitro-o-toluidine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Diphenylamine	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Phenacetin	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Pentachloronitrobenzene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
Dinoseb	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
Methapyrilene	µg/L	10	Org-012	<10	[NT]	[NT]	[NR]	[NR]
p-Dimethylaminoazobenzene	µg/L	5	Org-012	<5	[NT]	[NT]	[NR]	[NR]
2-Acetylaminofluorene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
7,12-Dimethylbenz(a)anthracene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
3-Methylcholanthrene	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
a-BHC	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
b-BHC	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
g-BHC	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
d-BHC	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Heptachlor	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Aldrin	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	121%
Heptachlor Epoxide	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
g-Chlordane	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
a-Chlordane	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Endosulfan I	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
p,p'-DDE	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Dieldrin	µg/L	2	Org-012	<2	[NT]	[NT]	LCS-W1	123%
Endrin	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
p,p'-DDD	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Endosulfan II	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Endrin Aldehyde	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
p,p'-DDT	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Endosulfan Sulphate	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Endrin Ketone	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]

QUALITY CONTROL SVOC's in water	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Methoxychlor	µg/L	2	Org-012	<2	[NT]	[NT]	[NR]	[NR]
Surrogate 2-fluorophenol	%		Org-012	61	[NT]	[NT]	LCS-W1	83%
Surrogate Phenol-d_6	%		Org-012	30	[NT]	[NT]	LCS-W1	40%
Surrogate Nitrobenzene-d_5	%		Org-012	105	[NT]	[NT]	LCS-W1	88%
Surrogate 2-fluorobiphenyl	%		Org-012	96	[NT]	[NT]	LCS-W1	107%
Surrogate 2,4,6-Tribromophenol	%		Org-012	113	[NT]	[NT]	LCS-W1	101%
Surrogate p-Terphenyl-d_{14}	%		Org-012	108	[NT]	[NT]	LCS-W1	108%

QUALITY CONTROL PAHs in Water - Low Level	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base ll Duplicate ll %RPD	Spike Sm#	Spike % Recovery
Date extracted	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Naphthalene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	LCS-W1	70%
Acenaphthylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Acenaphthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluorene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	76%
Phenanthrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	82%
Anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Fluoranthene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	79%
Pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	78%
Benzo(a)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Chrysene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	77%
Benzo(b,j+k)fluoranthene	µg/L	0.2	Org-012	<0.2	[NT]	[NT]	[NR]	[NR]
Benzo(a)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	LCS-W1	75%
Indeno(1,2,3-c,d)pyrene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Dibenzo(a,h)anthracene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Benzo(g,h,i)perylene	µg/L	0.1	Org-012	<0.1	[NT]	[NT]	[NR]	[NR]
Surrogate p-Terphenyl-d14	%		Org-012	74	[NT]	[NT]	LCS-W1	120%

QUALITY CONTROL HM in water - dissolved	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Date analysed	-			14/03/2017	[NT]	[NT]	LCS-W1	14/03/2017
Arsenic-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	102%
Cadmium-Dissolved	µg/L	0.1	Metals-022	<0.1	[NT]	[NT]	LCS-W1	106%
Chromium-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	98%
Copper-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	99%
Lead-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	106%
Mercury-Dissolved	µg/L	0.05	Metals-021	<0.05	[NT]	[NT]	LCS-W1	100%
Nickel-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	96%
Zinc-Dissolved	µg/L	1	Metals-022	<1	[NT]	[NT]	LCS-W1	98%
QUALITY CONTROL Miscellaneous Inorganics	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			13/03/2017	[NT]	[NT]	LCS-W1	13/03/2017
Date analysed	-			13/03/2017	[NT]	[NT]	LCS-W1	13/03/2017
pH	pH Units		Inorg-001	[NT]	[NT]	[NT]	LCS-W1	101%
Electrical Conductivity	µS/cm	1	Inorg-002	<1	[NT]	[NT]	LCS-W1	96%
Turbidity	NTU	0.1	Inorg-022	<0.1	[NT]	[NT]	LCS-W1	112%
Ammonia as N in water	mg/L	0.005	Inorg-057	<0.005	[NT]	[NT]	LCS-W1	108%
Nitrate as N in water	mg/L	0.005	Inorg-055	<0.005	[NT]	[NT]	LCS-W1	99%
Sulphide	mg/L	0.5	Inorg-051	<0.5	[NT]	[NT]	LCS-W1	97%
QUALITY CONTROL Ion Balance	UNITS	PQL	METHOD	Blank	Duplicate Sm#	Duplicate results Base II Duplicate II %RPD	Spike Sm#	Spike % Recovery
Date prepared	-			13/03/2017	[NT]	[NT]	LCS-W3	13/03/2017
Date analysed	-			13/03/2017	[NT]	[NT]	LCS-W3	13/03/2017
Calcium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W3	107%
Potassium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W3	114%
Sodium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W3	95%
Magnesium - Dissolved	mg/L	0.5	Metals-020	<0.5	[NT]	[NT]	LCS-W3	103%
Hydroxide Alkalinity (OH^-) as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NR]	[NR]
Bicarbonate Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NR]	[NR]
Carbonate Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	[NR]	[NR]
Total Alkalinity as $CaCO_3$	mg/L	5	Inorg-006	<5	[NT]	[NT]	LCS-W3	104%
Sulphate, SO4	mg/L	1	Inorg-081	<1	[NT]	[NT]	LCS-W3	88%
Chloride, Cl	mg/L	1	Inorg-081	<1	[NT]	[NT]	LCS-W3	83%
Ionic Balance	%		Inorg-040	[NT]	[NT]	[NT]	[NR]	[NR]

Report Comments:

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

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

Quality Control Definitions

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

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

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

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

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

Laboratory Acceptance Criteria

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

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

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

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

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

Measurement Uncertainty estimates are available for most tests upon request.

010126

CHAIN OF CUSTODY

JBS&G

PROJECT NO.: [redacted] 52401
PROJECT NAME: CHESTER HILL
DATE NEEDED BY: 48 HOURS
PHONE: Sydney: 02 8245 0300 | Perth: 08 9488 0100 | Brisbane: 07 3112 2688
SEND REPORT & INVOICE TO: (1) adminnsw@jbsg.com.au; (2) .....smcveigh.....@jbsg.com.au; (3) .....cbuttsg.....@jbsg.com.au
COMMENTS / SPECIAL HANDLING / STORAGE OR DISPOSAL:

LABORATORY BATCH NO.:
SAMPLERS: SM
QC LEVEL: NEPM (2013)

537474

NOTES:

END TO ENVIROLAB

SAMPLE ID	MATRIX	DATE	TIME	TYPE & PRESERVATIVE	pH	TRH/BTEX	Metals	PAH/Phenol	VOC	SVOC	EC	pH	Sulphides	Cyanide/Thiocyanate	Fluoride	Ammonia	Nitrates	TYPE OF ASBESTOS ANALYSIS: IDENTIFICATION	TYPE OF ASBESTOS ANALYSIS: NEPM/WA
17	WATER	10-3-17		AMBER x3 x HCl + x1 x NaOH + METALS + PRESERVED ON ICE		X	X	X	X	X	X	X	X	X	X	X	X		
QA20160310	↓	↓				↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓		
(1) QC20160310																			

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

Job No: 163394
Date Received: 13/3
Time Received: 11:00
Received by: SK
Temp: Cool/Ambient
Cooling: Ice/Icepack
Security: Intact/Broken/None

RELINQUISHED BY:	METHOD OF SHIPMENT:	RECEIVED BY:	FOR RECEIVING LAB USE ONLY:
NAME: SMcveigh DATE: 7/3/17	CONSIGNMENT NOTE NO.	NAME: E.M. DATE: 14:30 10/3/17	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF: JBS&G	TRANSPORT CO.	OF: EUROFINS	COOLER TEMP ..... deg C
NAME: DATE:	CONSIGNMENT NOTE NO.	NAME: SK DATE: 13/3	COOLER SEAL – Yes..... No ..... Intact ..... Broken .....
OF:	TRANSPORT CO	OF: ELS	COOLER TEMP ..... deg C

Container & Preservative Codes: P = Plastic; J = Soil Jar; B = Glass Bottle; N = Nitric Acid Prsvd.; C = Sodium Hydroxide Prsvd; VC = Hydrochloric Acid Prsvd Vial; VS = Sulfuric Acid Prsvd Vial; S = Sulfuric Acid Prsvd; Z = Zinc Prsvd; E = EDTA Prsvd; ST = Sterile Bottle; O = Other

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Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **544155-W**
Project name CHESTER HILL
Project ID 52401
Received Date May 01, 2017

Client Sample ID			**17**	**15**	**7**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-My00502**	**S17-My00503**	**S17-My00504**
Date Sampled			**May 27, 2017**	**May 27, 2017**	**May 27, 2017**
Test/Reference	LOR	Unit			
Suspended Solids	5	mg/L	8.0	10	52000

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
Suspended Solids	Sydney	May 02, 2017	7 Day

- Method: 4100 Total Suspended Solids dried at 103-105°C

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 18217

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	May 1, 2017 9:58 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	544155	**Due:**	May 2, 2017
		Phone:	02 8245 0300	**Priority:**	1 Day
		Fax:		**Contact Name:**	Chris Bielby
Project Name:	CHESTER HILL				
Project ID:	52401				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Suspended Solids
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 18217						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	17	May 27, 2017		Water	S17-My00502	X
2	15	May 27, 2017		Water	S17-My00503	X
3	7	May 27, 2017		Water	S17-My00504	X
Test Counts						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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

org/100ml: Organisms per 100 millilitres

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

mg/l: milligrams per litre

ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
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 20-130%

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							
Suspended Solids	mg/L	< 5			5	Pass	
LCS - % Recovery							
Suspended Solids	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Suspended Solids	S17-Ap19407	NCP	mg/L	18	19	5.0	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Inorganic (NSW)



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.

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.

eurofins | mgt

Melbourne
3-5 Kingston Town Close
Oakleigh Vic 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261 Site # 18217

ABN – 50 005 085 521 e.mail : EnviroSales@eurofins.com web : www.eurofins.com.au

Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Chris Bielby
Project name: CHESTER HILL
Project ID: 52401
COC number: Not provided
Turn around time: 1 Day
Date/Time received: May 1, 2017 9:58 AM
Eurofins | mgt reference: **544155**

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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

eurofins | mgt

Certificate of Analysis

JBS & G Australia (NSW) P/L
Level 1, 50 Margaret St
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: **Chris Bielby**

Report **543503-W**
Project name CHESTER HILL
Project ID 52401
Received Date Apr 24, 2017

Client Sample ID			**17**	**15**	**7**
Sample Matrix			**Water**	**Water**	**Water**
Eurofins | mgt Sample No.			**S17-Ap19457**	**S17-Ap19458**	**S17-Ap19459**
Date Sampled			**Not Provided**	**Not Provided**	**Not Provided**
Test/Reference	LOR	Unit			
Suspended Solids	5	mg/L	270	54	24000

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
Suspended Solids	Sydney	May 02, 2017	7 Day

- Method: 4100 Total Suspended Solids dried at 103-105°C

ABN– 50 005 085 521
e.mail : EnviroSales@eurofins.com
web : www.eurofins.com.au

Melbourne
2-5 Kingston Town Close
Oakleigh VIC 3166
Phone : +61 3 8564 5000
NATA # 1261
Site # 1254 & 14271

Sydney
Unit F3, Building F
16 Mars Road
Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Perth
2/91 Leach Highway
Kewdale WA 6105
Phone : +61 8 9251 9600
NATA # 1261
Site # 18217

Company Name:	JBS & G Australia (NSW) P/L	**Order No.:**		**Received:**	May 1, 2017 9:24 AM
Address:	Level 1, 50 Margaret St Sydney NSW 2000	**Report #:**	543503	**Due:**	May 2, 2017
		Phone:	02 8245 0300	**Priority:**	1 Day
		Fax:		**Contact Name:**	Chris Bielby
Project Name:	CHESTER HILL				
Project ID:	52401				

Eurofins | mgt Analytical Services Manager : Nibha Vaidya

Sample Detail						Suspended Solids
Melbourne Laboratory - NATA Site # 1254 & 14271						
Sydney Laboratory - NATA Site # 18217						X
Brisbane Laboratory - NATA Site # 20794						
Perth Laboratory - NATA Site # 18217						
External Laboratory						
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**	
1	17	Not Provided		Water	S17-Ap19457	X
2	15	Not Provided		Water	S17-Ap19458	X
3	7	Not Provided		Water	S17-Ap19459	X
Test Counts						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. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
4. Results are uncorrected for matrix spikes or surrogate recoveries.
5. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
6. Samples were analysed on an 'as received' basis. 7. 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.

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

Units

mg/kg: milligrams per Kilogram

ug/l: micrograms per litre

ppb: Parts per billion

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ppm: Parts per million

%: Percentage

NTU: Nephelometric Turbidity Units

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. 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.
Batch Duplicate	A second piece of analysis from a sample outside of the clients batch of samples but run within the laboratory batch of analysis.
Batch SPIKE	Spike recovery reported on a sample from outside of the clients batch of samples but run within the laboratory batch of analysis.
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APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
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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 20-130%

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							
Suspended Solids	mg/L	< 5			5	Pass	
LCS - % Recovery							
Suspended Solids	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Duplicate									
				Result 1	Result 2	RPD			
Suspended Solids	S17-Ap19407	NCP	mg/L	18	19	5.0	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

Authorised By

Nibha Vaidya	Analytical Services Manager
Ryan Hamilton	Senior Analyst-Inorganic (NSW)



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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Sample Receipt Advice

Company name: **JBS & G Australia (NSW) P/L**

Contact name: Chris Bielby
Project name: CHESTER HILL
Project ID: 52401
COC number: Not provided
Turn around time: 1 Day
Date/Time received: May 1, 2017 9:24 AM
Eurofins | mgt reference: **543503**

Sample information

☑ A detailed list of analytes logged into our LIMS, is included in the attached summary table.

☑ Sample Temperature of a random sample selected from the batch as recorded by Eurofins | mgt Sample Receipt : 11.7 degrees Celsius.

☑ 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.

☒ 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 8400 or by e.mail: NibhaVaidya@eurofins.com

Results will be delivered electronically via e.mail to Chris Bielby - cbielby@jbsg.com.au.

Appendix D QA/QC

Summary of QA/QC Results

The QA/QC results are summarised in the Table below.

QA/QC Results Summary

Data Quality Indicator	Frequency	Results	DQI Compliance[1]
Precision			
Field duplicates (intra-laboratory)	2 / 25 samples analysed (8 %)	0 – 77 % RPD	Partial[1]
Field triplicates (inter-laboratory)	2 / 25 samples analysed (8 %)	0 – 110 % RPD	Partial[1]
Laboratory duplicates	7 / 25 samples analysed (28 %)	0 – 67 % RPD	Partial[1]
Accuracy			
Surrogates	All organics	30 – 150 % recovery	Partial[1]
Laboratory control samples	7 / 25 samples analysed (28 %)	38 – 130 % recovery	Partial[1]
Matrix spike	7 / 25 samples analysed (28 %)	70 – 130 % recovery	Yes
Representativeness			
Laboratory blanks	1 per laboratory batch	<LOR	Yes
Trip spike	1 per sampling event	86-110 % recovery	Yes
Trip blank	1 per sampling event	<LOR	Yes
Sampling appropriate for media and analytes	All samples, media and analytes	All sampling conducted in accordance with JBS&G procedures	Yes
Samples extracted and analysed within holding times.	All samples	All samples extracted and analysed within holding times	Yes

1 Refer to discussion below

Discussion of QA/QC Results

Precision

The results of analysis for the primary samples and field duplicate and triplicate samples met the data quality criteria with the exception of some heavy metals. The elevated RPDs are most likely attributed to the low concentrations reported in each sample and is not considered to affect the precision of the dataset for the purposes of the assessment. As a conservative measure, the highest reported concentration from each sample will be considered when interpreting the dataset.

The results of all laboratory duplicate analysis met the data quality criteria with the exceptions of flourene in sample QC01 (RPD 67 %) and ammonia in sample 15 (RD 67 %). In both cases, the reported concentrations of each analyte were close to the laboratory LOR and are therefore not considered to affect the precision of the dataset.

Accuracy

There was multiple surrogate recoveries outside the preferred range within each of the following class of compounds: phenols, PAHs and VOCs. Low surrogate recoveries indicate that the concentration of a class of compounds may be less than the actual concentrations in the samples. It is noted that a number of surrogates are used for each class of compounds in the analysis of each sample, and the recovery of the alternate surrogates was within the preferred levels. The potentially lower results are therefore not considered to affect the reliability of the data for the assessment.

The results of laboratory control sample (LCS) were largely within the acceptable limits. Some phenol LCS recoveries were outside JBS&G preferred range, but were within the NATA accredited laboratory's dynamic recovery limits and are, therefore, considered acceptable.

Representativeness

A laboratory blank was analysed with each batch of samples. There were no reported concentrations of target analytes within the laboratory blanks exceeding the laboratory LOR.

The results of trip spike analysis were within acceptable limits, indicating there was low potential for losses of volatile compounds in the samples collected. It is noted that a trip spike was not submitted with samples collected on 1 and 10 March 2017. However, all standard sampling procedures were followed as per **Section 4** and given that all trip spike recoveries (when submitted during alternate sampling events) were within acceptable limits, it is considered that there was low potential for losses of volatile compounds in all sampling events.

The results of blank analysis were less than the laboratory's limit of reporting, indicating there was low potential for volatile compound cross-contamination of samples.

All sampling conducted during the investigation was appropriate for the media and analytes.

All samples submitted for laboratory analysis were extracted and analysed within their respective holding times.

Data Suitability

Review of the results of the field and laboratory QA/QC program indicates that the data obtained from the sampling and analysis can be considered appropriately accurate for the objectives of the assessment.

Appendix E Field Sheets

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW01
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** fine
Pre-purging groundwater depth (m): 0.870	**Post-sampling groundwater depth (m):** 1.620	**Total well depth (m):**
Well diameter (mm): 50. **Well volume (L):**	**Pump on time:** 7:33 **Pump off time:** 8:00	**Cycles per minute:**

DTW(m)

Field Measurements

Time	Purge Rate (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
7:35	1.375	1	0.18	2.1	13313	7.18	74.3	22.4	
7:39	1.490	2	0.20	2.4	13180	7.14	69.0	22.1	
7:44	1.530	3	0.26	2.9	13142	7.14	68.0	21.9	
7:46	1.560	4	0.26	3.1	13165	7.14	67.5	21.9	
7:49	1.615	5	0.27	3.3	13071	7.14	66.7	21.9	
7:53	1.650	6	0.30	3.6	13144	7.14	66.4	21.9	

Comments (Odour, colour, turbidity, sheen etc)

clear, colourless, no odour, v. slight sheen

4x vials, 1 L amber, 2 x metals bottles, 1 purple inorganics, 1 green plastic

Were Metals Field Filtered? Yes (2x metals bottles, 1 filtered, 1 total).

Were QA/QC Samples Collected? No.

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW02
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** Fine
Pre-purging groundwater depth (m): 0.420	**Post-sampling groundwater depth (m):** 0.475	**Total well depth (m):** 8.230
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 8:20 **Pump off time:** 9:00	**Cycles per minute:**

Field Measurements

DTW(m)

Time	~~Purge Rate~~ (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
8:23	0.465	1	0.21	2.5	16354	7.17	-19.4	21.7	
8:25	0.470	2	0.18	2.2	16289	7.13	-22.4	21.5	
8:28	0.480	3	0.15	1.8	16235	7.11	-24.0	21.4	
8:31	0.475	4	0.19	2.3	16243	7.11	-24.8	21.4	
8:33	0.480	5	0.23	2.8	16200	7.11	-25.1	21.3	
8:35	0.480	6	0.24	2.9	16199	7.11	-25.2	21.3	

Comments (Odour, colour, turbidity, sheen etc)

clear, colourless, no O/S.
high turb, brown,

Were Metals Field Filtered? 1 metals bottle filtered, 1 total

Were QA/QC Samples Collected? Yes, QC01 / QC01A

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW03
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** Fine
Pre-purging groundwater depth (m): 0.930	**Post-sampling groundwater depth (m):** 0.940	**Total well depth (m):** 7.50
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 9:16 **Pump off time:** 9:35	**Cycles per minute:**

DTW(m)

Field Measurements

Time	~~Purge Rate~~ (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			**+/- 10%**		**+/- 3%**	**+/- 0.5**	**+/- 10 mV**		**+/- 3%**
9:20	0.930	1	0.19	2.3	13778	7.36	-67.7	23.4	
9:22	0.930	2	0.13	≈ 1.7	13715	7.34	-70.8	23.2	
9:24	0.930	3	0.10	1.3	13617	7.34	-75.0	23.0	
9:26	0.940	4	0.10	1.2	13604	7.34	-75.7	23.0	
9:28	0.950	5	0.10	1.2	13581	7.33	-78.7	22.9	
9:30	0.950	6	0.11	1.3	13602	7.33	-80.4	22.8	

Comments (Odour, colour, turbidity, sheen etc) slight sheen, no odour, high turbidity, brown/grey.

Were Metals Field Filtered? Yes, 1 metals bottle filtered, 1 total

Were QA/QC Samples Collected? No.

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Cheeks Hill	**Well ID:** MW04
Person sampling: L. Lwedecka.	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** fine
Pre-purging groundwater depth (m): 1.050	**Post-sampling groundwater depth (m):** 1.25	**Total well depth (m):** 8.12.
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 9:56 **Pump off time:** 10:35	**Cycles per minute:**

Field Measurements

DTW(M)

Time	~~Purge Rate~~ (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
~~9:56~~ 9:58	1.890	1	0.15	1.7	14819	7.19	-69.7	22.9	
10:00	1.150	2	0.14	1.8	14883	7.19	-70.1	23.0	
10.03	1.120	3	0.13	1.6	15112	7.22	-56.5	22.8	
10:06	1.130	4	0.15	1.9	15216	7.18	-26.2	22.7	
10:09	1.130	5	0.16	2.0	15209	7.18	-23.6	22.7	
10:11	1.150	6	0.19	2.2	15199	7.18	-11.5	22.6	
10:13	1.150	7	0.23	2.7	15252	7.17	-4.8	22.7	
10:15	1.150	8	0.27	3.2	15275	7.18	0.9	22.6	
10:18	1.155	9	0.28	3.4	15297	7.17	1.1	22.7	
10:20	1.155	10	0.28	3.4	15216	7.18	-7.0	22.7	
10:22	1.170	11	0.29	3.5	14917	7.24	-32.6	22.7	
10:25	1.170	12	0.30	3.6	14875	7.25	-39.1	22.8	
10:27	1.180	13	0.31	3.7	14824	7.26	-46.7	22.7	
10:29	1.180	14	0.31	3.8	14803	7.27	-46.1	22.7	

Comments (Odour, colour, turbidity, sheen etc) high turb, brown/grey (light), no odour, ~~no~~ slight sheen.

Were Metals Field Filtered? Yes, 1 filtered, 1 total

Were QA/QC Samples Collected? No.

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW05
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** fine
Pre-purging groundwater depth (m): 2.030	**Post-sampling groundwater depth (m):** 2.520	**Total well depth (m):**
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 11:02 **Pump off time:** 11:55	**Cycles per minute:**

Field Measurements

Time	Purge Rate (mL/min)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
11:06	2.490	1	0.21	2.5	17589	7.10	15.2	22.9	
11:10	2.500	2	0.16	2.1	19778	7.14	30.8	22.6	
11:13	2.515	3	0.18	2.2	19834	7.17	38.2	22.6	
11:15	2.530	4	0.21	2.6	19714	7.18	37.3	22.4	
11:18	2.540	5	0.27	3.3	19845	7.19	40.7	22.3	
purging stopped →	~~2.540~~	~~5~~							
resume → 11:40	2.740	7	0.54	6.6	17263	7.19	12.6	22.7	
11:42	2.710	8	0.37	4.5	19996	7.21	30.2	22.4	
11:45	2.660	9	0.34	4.3	20027	7.23	35.7	22.5	
11:48	2.635	10	0.35	4.2	19952	7.23	37.3	22.4	
11:51	2.630	11	0.35	4.3	19990	7.23	37.7	22.5	

Comments (Odour, colour, turbidity, sheen etc)

slight sheen, no odour, grey, mod turbidity

Were Metals Field Filtered? Yes 1 filtered, 1 total metals

Were QA/QC Samples Collected? No

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW06
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** fine
Pre-purging groundwater depth (m): 1.380	**Post-sampling groundwater depth (m):** 1.530	**Total well depth (m):**
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 12:17 **Pump off time:** 12:40	**Cycles per minute:**

Field Measurements

DTW(m)

Time	~~Purge Rate~~ (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			**+/- 10%**		**+/- 3%**	**+/- 0.5**	**+/- 10 mV**		**+/- 3%**
12:21	1.550	1	0.24	3.0	17246	7.22	67.8	24.6	
12:24	1.570	2	0.31	3.9	17027	7.24	64.8	23.8	
12:28	1.615	3	0.38	4.7	16939	7.25	63.4	23.5	
12:30	1.630	4	0.43	5.3	16880	7.27	63.2	23.4	
12:33	1.650	5	0.44	5.5	16869	7.28	62.3	23.4	
12:35	1.660	6	0.44	5.5	16866	7.28	62.4	23.3	

Comments (Odour, colour, turbidity, sheen etc)

no O/S, clear, cacurlers.

Were Metals Field Filtered? Yes, 1 filtered, 1 total.

Were QA/QC Samples Collected?

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW07
Person sampling: LL	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** Fine - hot
Pre-purging groundwater depth (m): 1.160	**Post-sampling groundwater depth (m):** 1.480	**Total well depth (m):**
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 12:58 **Pump off time:** 13:25	**Cycles per minute:**

Field Measurements

Time	~~Purge Rate (mL/min)~~ DTW (m)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
13:01	1.475	1	1.21	15.6	14988	7.55	67.3	25.6	
13:04	1.510	2	1.24	15.8	14910	7.54	66.0	25.5	
13:07	1.530	3	1.15	14.7	13824	7.54	63.8	25.5	
13:10	1.545	4	1.01	12.8	12869	7.55	62.5	25.5	
13:12	1.565	5	0.89	11.4	12477	7.53	62.1	25.6	
13:14	1.570	6	0.85	10.4	12032	7.45	63.5	25.5	
13:17	1.580	7	0.79	10.0	12137	7.42	63.8	25.5	
13:20	1.585	8	0.78	10.0	12135	7.41	63.7	25.5	

Comments (Odour, colour, turbidity, sheen etc)

mod turbidity, grey-brown, no odour, slight sheen

Were Metals Field Filtered? Yes 1 filtered, 1 total.

Were QA/QC Samples Collected? No

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW08
Person sampling: L. Luedecke	**Sample method:** Peristaltic	**Date:** 16/2/17 **Weather:** fine, hot
Pre-purging groundwater depth (m): 2.200	**Post-sampling groundwater depth (m):** 2.740	**Total well depth (m):**
Well diameter (mm): 50 **Well volume (L):**	**Pump on time:** 13:54 **Pump off time:** 14:15	**Cycles per minute:**

Field Measurements

DTW(m)

Time	~~Purge Rate~~ (~~mL/min~~)	Volume purged (L)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
13:57	2.550	1	2.21	28.1	13967	7.53	76.0	25.9	
14:00	2.690	2	1.75	22.2	14224	7.48	71.8	26.0	
14:02	2.730	3	1.72	22.2	14565	7.48	71.1	25.8	
14:05	2.750	4	1.63	21.1	14382	7.46	70.4	26.1	
14:08	2.770	5	1.60	20.6	14533	7.45	70.3	26.0	
14:11	2.780	6	1.57	20.2	14404	7.44	70.3	26.1	

Comments (Odour, colour, turbidity, sheen etc)

clear, colourless, no odour, slight sheen.

Were Metals Field Filtered? Yes, 1 filtered, 1 total.

Were QA/QC Samples Collected? No

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

Groundwater Sampling Form

FIELD RECORD SHEETS

Project name: 52401	**Location:** Chester Hill	**Well ID:** MW09
Person sampling: LL	**Sample method:** peristaltic	**Date:** 10/2/17 **Weather:** fine, hot
Pre-purging groundwater depth (m): 1.195	**Post-sampling groundwater depth (m):** 1.730	**Total well depth (m):**
Well diameter (mm): 50. **Well volume (L):**	**Pump on time:** 14:43 **Pump off time:** 15:16	**Cycles per minute:**

DTW(m) BL

Field Measurements

Time	~~Purge Rate~~ (~~mL/min~~)	~~Volume purged~~ (~~L~~)	DO (mg/L)	DO (% saturation)	EC (us/cm)	pH (units)	Redox (mV)	Temp (oC)	TDS ppm
Field Stabilisation Criteria [1]:			+/- 10%		+/- 3%	+/- 0.5	+/- 10 mV		+/- 3%
14:45	1.510	1	0.09	1.3	17528	8.13	71.4	24.2	
14:48	1.580	2	0.07	1.0	17429	8.03	69.3	23.9	
14:51	1.630	3	0.06	0.7	17414	7.93	69.3	23.5	
14:54	1.660	4	0.13	1.6	17412	7.57	71.4	23.2	
14:56	1.690	5	0.12	1.5	17280	7.49	68.4	22.9	
14:59	1.720	6	0.15	1.9	18037	7.44	64.2	22.7	
15:02	1.745	7	~~0.17~~ 0.17	2.2	17178	7.43	62.7	22.6	
15:04	1.760	8	0.20	2.6	17250	7.42	61.3	22.7	
15:07	1.765	9	0.25	3.0	17240	7.40	60.1	22.8	
15:09	1.760	10	0.30	3.7	17177	7.37	58.9	22.7	
15:12	1.765	11	0.35	4.3	17175	7.37	56.6	22.7	
15:15	1.770	12	0.36	4.4	17179	7.38	55.1	22.5	
15:18	1.770	13	0.35	4.5	17188	7.38	54.2	22.6	

Comments (Odour, colour, turbidity, sheen etc)

Slight sheen, no odour, was clear, colourless.

Were Metals Field Filtered? Yes, 1 filtered, 1 total

Were QA/QC Samples Collected? No.

[1] These parameters may be considered stable when three consecutive readings (obtained several minutes apart) are within these levels.

Source "Victorian Environmental Protection Authority, *Groundwater Sampling Guidelines*, Publication 669, April 2000".

191 MILLER ROAD CHESTER HILL

SETH : 0459 173 403

a



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Field Equipment Calibration and Decontamination

JBS&G

PROJECT NAME:	Chester Hill	PROJECT NO:	52401
FIELD DATES:	16/2/17	FIELD STAFF:	LL

CALIBRATION SUMMARY	
EQUIPMENT:	WQM
CALIBRATION STANDARD:	– See airnet calibration record.

DATE	TIME	READING (ppm_v)	COMMENTS

DECONTAMINATION SUMMARY

EQUIPMENT: Interface probe.

1. Was the equipment decontaminated appropriately prior to sampling at each location?	(Y)	N	NA
2. Was excess soil removed by scraping, brushing or wiping with disposable towels?	Y	N	(NA)
3. Was the equipment contaminated with grease, tar or similar material? If so, was the equipment steam cleaned or rinsed with pesticide-grade acetone:hexane?	Y Y	N N	(NA)
4. Was phosphate-free detergent used to wash the equipment?	(Y)	N	NA
5. Was the equipment rinsed with clean water?	(Y)	N	NA
6. Was the equipment then rinsed with deionised water?	(Y)	N	NA
7. Were all sample containers cleaned and acid or solvent washed prior to sample collection?	(Y)	N	NA

WERE ANY ADDITIONAL DECONTAMINATION MEASURES REQUIRED? PROVIDE DETAILS.

nitrile gloves worn.

Appendix F Surface Water Monitoring Program

Surface Water Monitoring Program, 191 Miller Street, Chester Hill

1. Objectives

The objectives of the surface water monitoring program are to outline the sampling required to assess the suitability of site surface water for discharge to stormwater and assess the efficacy of the pollution mitigation measures to be implemented at the site.

2. Sampling Locations

Surface water is to be sampled from the 3 stormwater pits identified as Pit 7, Pit 15 and Pit 17 and shown on **Figure 2**.

3. Sample Collection Techniques

'Grab' samples are to be collected from the nominated locations by directly filling new laboratory supplied and preserved (where required) bottles. At the time of collection, water quality indicator parameters (pH, electrical conductivity, dissolved oxygen, oxidation-reduction potential and temperature) should be measured in the field at each location. All water samples should be field filtered using 0.45 micron filters.

4. Sample Frequency

Samples are to be collected on a monthly basis and where possible, timed to coincide with a wet weather event (typically being greater than 15 mm of rain over a 24 hr period). Every 12 months, the sampling frequency should be reassessed based on the results of previous monitoring rounds.

5. Laboratory Analysis

All samples should be analysed by a NATA accredited laboratory for the following schedule of analytes:

- Dissolved heavy metals (arsenic, cadmium, chromium, copper, lead, mercury, nickel, zinc);
- Total Recoverable Hydrocarbons (TRH);
- Total Suspended Solids (TSS); and
- Major cations and anions.

It is noted that the above analysis is recommended on the basis of those constituents that were reported to exceed (on occasion) the site screening criteria.

6. Trigger Values

Appropriate trigger values have been identified in **Section 5** of the DIA and summarised in Table A below.

Table A: Site Stormwater Trigger Values

Analyte	Screening Criteria (mg/L)	Screening Criteria Source
Arsenic	-	Screening Criteria - Fresh (ANZECC 2000)
Chromium	0.0002	
Cadmium	0.001	
Copper	0.0014	
Lead	0.0034	
Mercury	0.0006	
Nickel	0.011	
Zinc	0.008	
TRH	<LOR	N/A
TSS	50	Landcom (2004)

It is noted that the screening criteria for metals are the generic trigger values presented in ANZECC (2000) for fresh water ecosystems and will require to be corrected for surface water hardness levels as reported in each monitoring round. In the absence of any detailed guidance on TRH trigger values protective of aquatic ecosystems, the laboratory limit of reporting has been adopted as a precautionary approach. It is noted that the trigger values presented in Table A constitute values that would prompt a review of site operational matters and corrective actions and do not constitute values applicable to License discharge conditions.

7. Monitoring Rainfall

Rainfall data from the onsite weather station is required to be downloaded during the period of each monitoring event. In addition, surface water discharge frequency and approximate volumes are required to be monitored.

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