St George Illawarra Dragons Community & High Performance Centre

Detailed Site Investigation Report

St George Illawarra Rugby League Football Club

Reference: 754-SYDGE295047-AC

14 September 2022

ST GEORGE ILLAWARRA DRAGONS COMMUNITY & HIGH PERFORMANCE CENTRE

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PREPARED FOR

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Restriction on Disclosure and Use of Data

The attached document entitled "Important information about your Tetra Tech Coffey Environmental report" forms an integral part of this report and presents additional information about it uses and limitations.

Cover page image: St George Illawarra Dragons CPHC, Artist Impression – View from North

EXECUTIVE SUMMARY[1]

St George Illawarra Rugby League Football Club Pty Ltd (the Dragons) propose to construct a Community and High-Performance Training Centre (CHPC), in partnership with the University of Wollongong (UOW). The proposed CHPC will be situated on a 7-hectare site (herein referred to as "the site"), located in the northern portion of UOW's Innovation Campus, at 7-9 Squires Way, Fairy Meadow NSW 2519. The proposed development is expected to comprise up to large administrative / training building (up to 6,500m^2 Gross Floor Area), three (3) NRL-sized football fields and associated car parking.

To support the above project, NS Projects Pty Ltd (NS) on behalf of the Dragons commissioned Tetra Tech Coffey (Coffey) to undertake a combined Geotechnical Investigation and Detailed Site Investigation (DSI), and a separate hazardous materials survey at the site. These investigations were undertaken in general accordance with Coffey fee proposal (Ref No. SYDGE29507-AA, dated 19 October 2021).

The DSI identified the following:

- The site has been historically occupied by the Balgownie Migrant Worker's Hostel from the early-1950's to the mid-1970's, which comprised up to 182 Nissen and Quonset Huts (army-style buildings with rounded corrugated iron roofing, and weatherboard construction), with a shared communal Kitchen/Dining Hall and associated Laundry facilities present in the centre of the site. Prior use is inferred to be agricultural or cleared open space. Following the closure of the worker's hostel, the site was subsequently used for open space / playing fields until the establishment of the University Innovation Campus sometime around 2006.
- The shared communal kitchen / dining hall building remains in the centre of the site and is occupied by a childcare facility. Two of the huts have been restored and are adjacent to the west of the kitchen / dining hall building. A recent HAZMAT survey of these structures identified bonded ACM and lead paint in the former kitchen and dining hall building and historical hut buildings. Lead-containing dust and asbestos dust were also identified in the larger former kitchen / dining hall building.
- Subsurface conditions across the site comprised variable thicknesses of topsoil / fill material in various boreholes, underlain by alluvial clay /sand, residual sandy clay and weathered sedimentary rock (sandstone and siltstone) to the limit of the investigation.
- Groundwater was encountered to depths ranging between 0.3m up to 5.5m bgl, with groundwater logger data collected over a 3-week period indicating that groundwater predominantly flows towards the east and south-east. Standing water levels do not appear to be significantly influenced by tidal movements
- Analysis of soil samples collected from 28 sampling positions spread across the site has not identified widespread soil contamination. With the exception of one near-surface sample collected from borehole BH4 (0.1-0.2mbgl) which reported lead concentrations exceeding the health/ecological criteria, other samples reported COPC generally below the LOR and consistently below the soil assessment criteria. Available data shows the lead-impacted soil does not extend significantly in a vertical direction at location BH4. The source of lead is suspected to derive from fill material and/or from the historical use and breakdown of lead paint on former structures at the site.

[1] This executive summary must be read in the context of the full report and the attached limitations.

- Groundwater samples recorded concentrations of copper, lead and zinc exceeding the adopted assessment however given that similar concentrations were reported in in upgradient wells compared to downgradient wells, suggesting fill present within the site does not appear to have resulted in significant deterioration of groundwater quality and these metals derive from diffuse sources within the surrounding urban environment.
- Acid sulfate soil testing indicates that the alluvial subsurface soils may be acid-forming at depth, with one sample (BH10_1.5-1.95) exceeding the action criteria stipulated in the Acid Sulfate Soil Manual.
- One round of ground gas monitoring recorded elevated concentrations of carbon dioxide in BH1. Methane was not detected. The available data collected from this investigation infers ground gases pose a low risk although Coffey notes this monitoring event was not reflective of conditions that promote positive gas flow. Ground gases were assessed to comprise Characteristic Situation 2 (CS2), which according to the recommendations outlined within the Hazardous Ground Gas Guidelines (NSW EPA, 2020), triggers the need for measures to be incorporated into the proposed structure to restrict gas ingress

Based on the above, Coffey concludes that the site can be made suitable for the proposed development as per the requirements of State Environmental Planning Policy No. 55 – Remediation of Land. Coffey recommends the following actions to manage potential issues around subsurface contamination at the site:

- Complete additional ground gas monitoring events over a range of atmospheric conditions to refine the assessment of potential risks and need for gas protection measures to be incorporated within the proposed structure.
- An Acid Sulfate Soil Management Plan (ASSMP) should be prepared to reduce potential for unacceptable environmental impacts associated with the disturbance of ASS within and surrounding the area of the proposed works. The ASSMP should be prepared by a suitably experienced consultant in general accordance with the Acid Sulfate Soil Manual, published by the Acid Sulfate Soils Management Advisory Committee (ASSMAC).
- An unexpected finds plan should be prepared as part of the construction management process to account for any non-specific and specific unexpected finds including asbestos. Non-specific unexpected finds refer to any possible occurrence within any area of the site not investigated. Specific unexpected finds refer to areas of the site where, for example, contamination was identified yet the source or the extent was not confirmed.
- In addition to the above, and prior to the commencement of earthworks and site redevelopment activities, it is recommended that a Construction Environmental Management Plan (CEMP) is prepared by the principal contractor to manage environmental risk posed to construction workers, neighbouring site users and to the surrounding environment.

This report should be read in conjunction with the attached “Important information about your Tetra Tech Coffey Environmental Report”.

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ACRONYMS/ABBREVIATIONS

Acronyms/Abbreviations	Definition
ACM	Asbestos-Containing Material
AEC	Area of Environmental Concern
AHD	Australian Height Datum
ANZG	Australian and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality
ASS	Acid Sulfate Soils
BaP	Benzo(a)pyrene
CoPC	Contaminant of Potential Concern
DBYD	Dial-Before-You-Dig
DGV	Default Guideline Value
DQI	Data Quality Indicators
DSI	Detailed Site Investigation
EILs	Ecological Investigation Levels
ESL	Ecological Screening Level
Hazmat	Hazardous Materials
HIL	Health Investigation Level
HSL	Health Screening Level
LEP	Local Environment Plan
LGA	Local Government Area
LOR	Limit of Reporting
m	metre
NEPM 2013	National Environment Protection Measure 1999 (as amended, 2013)
PFAS	Per- and Polyfluoroalkyl Substances
PFAS NEMP	PFAS National Environmental Management Plan 2.0
PASS	Potential Acid Sulfate Soils
PID	Photoionisation Detector
PPM	Parts Per Million
PSI	Preliminary Site Investigation
QC	Quality Control
RPD	Relative Percentage Difference
SOP	Standard Operating Procedures
SPT	Standard Penetration Tests
TRH	Total Recoverable Hydrocarbons
WQM	Water Quality Meter
LFG	Landfill Gas

1. INTRODUCTION

St George Illawarra Rugby League Football Club Pty Ltd (the Dragons) propose to construct a Community and High-Performance Centre (CHPC), in partnership with the University of Wollongong (UOW). The proposed CHPC will be situated on a 7-hectare site (herein referred to as 'the site), located in the northern portion of UOW's Innovation Campus, at 7-9 Squires Way, Fairy Meadow NSW 2519.

The proposed CHPC is intended to provide a clubhouse with a Gross Floor Area of 6,500m^2 used for training and club functions/administration, new football fields and associated car parking. Given the size of the project, it is expected that the CHPC would need to be developed in stages.

To support the above project, NS Projects Pty Ltd (NS)[2] on behalf of the Dragons commissioned Tetra Tech Coffey (Coffey) to undertake a combined geotechnical and contamination investigation, and a separate hazardous materials survey at the site. These investigations were undertaken in general accordance with Coffey fee proposal (Ref No. SYDGE29507-AA, dated 19 October 2021).

This report presents the works completed and results of a Detailed Site Investigation (DSI) undertaken at the site. The Geotechnical Investigation and Hazardous Building Material Survey reports are documented separately (referenced as 754-SYDGE29507-AB and AD respectively).

1.1 SUPPLIED DATA

The following documents were supplied by NS to assist our assessments.

- Ethos Urban (2021), *Dragons Centre of Excellence, Due Diligence Planning Review*, ref: 2210259, dated 4 June 2021
- BCE Surveyors (2022), *University Of Wollongong – Campus East Survey Drawings* (ref: *N1177* dated 01 February 2022)
- Populous Architects (2021), *St. George Illawarra Dragons High Performance and Community Centre – Due Diligence and Master Planning Report*, dated 06 July 2021.
- Concept Design Civil Drawings by Aurecon (dated 10 December 2021) including:
  - *General Construction Plan, SGI-CV-SK-20-0010 Rev A.*
  - *Bulk Earthworks Site Plan, SGI-CV-SK-20-0020 Rev A.*
  - *Bulk Earthworks Plan Sheet 2, SGI-CV-SK-20-0022 Rev A.*
  - *Pavement Site Plan, SGI-CV-SK-20-0200 Rev A.*

1.2 PROPOSED DEVELOPMENT

The concept design report indicates that the proposed CHPC development will involve:

- Dismantling / Demolition of three heritage listed buildings within the site along Innovation Way North.
- Construction of the CHPC, a two-storey building orientated east-west in the central portion of the site.

[2] Now trading as Bridge 42 Pty Ltd

- Construction of a playing field (Field 1) in the north-eastern portion of the site. The construction of this field will require placement of approximately 0.5m of fill over the existing surface level.
- Construction of a community playing field (Field 2) in the north-western portion of the site. The construction of this field requires cutting the current surface level by approximately 1.0m and subsequently placing 0.45m of fill to achieve the design surface level.
- Provision for a future field (Field 3) in the southern portion of the site.
- Construction of on-grade access roads and a carpark.

Figure 1.1 below provides a general layout of the proposed development, which was sourced from the Concept Design Civil Drawings (AECOM, 2021).

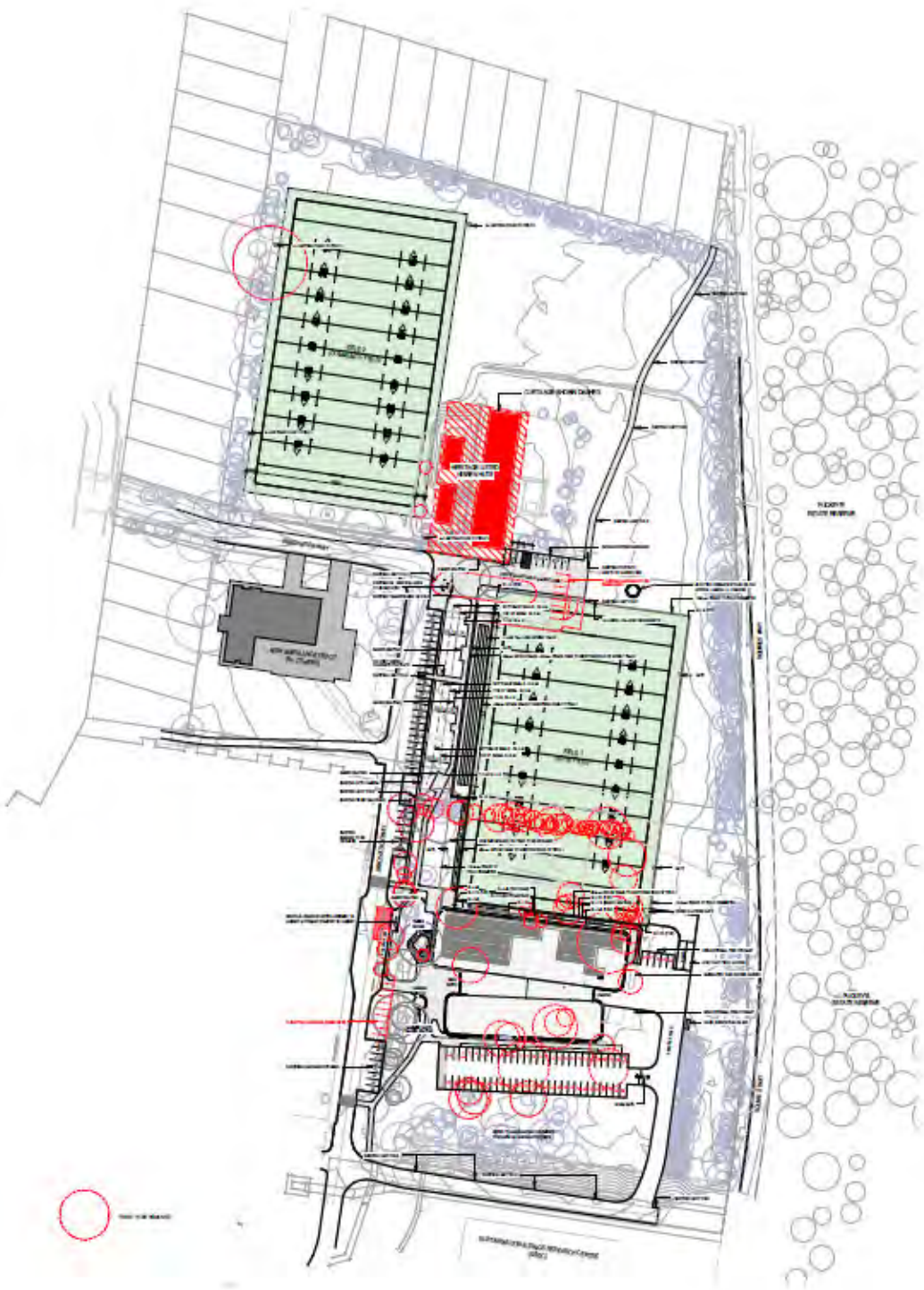

Figure 1.1 – Proposed development layout

1.3 OBJECTIVES

The objectives of this DSI were to:

- Investigate the contamination status and acid sulfate soil status of the site through desktop reviews, site investigation and laboratory analysis.
- Evaluate the suitability of the site for the proposed use as the CHPC (both commercial and recreational / outdoor settings).
- Outline recommendations for further environmental contamination assessment and/or management (if required).

1.4 SCOPE OF WORK

To meet the above objectives, Coffey undertook the following scope of works:

- Desktop review of geological and environmental maps, historical and other publicly available information.
- Engagement of a service locator to identify and clear proposed investigation locations for underground services.
- Field investigations across the proposed work areas, comprising:
  - Drilling of ten boreholes with Standard Penetration Tests (SPT) at selected locations and depth intervals using a track-mounted drill rig, ranging in depths from 5.5m below ground level (bgl) to 22.23m bgl.
  - 18 Cone Penetration Tests (CPT) ranging in depths from 5.0m to 14.0m bgl, and positioned mostly in proposed playing field areas. Soil cores were retrieved from each CPT investigation location to typical depths from ground surface to 1.2m bgl to observe shallow soil conditions and collect soil samples for laboratory analysis.
  - Installation of five groundwater wells in selected boreholes around the site boundaries
  - Installation of two gas monitoring wells in selected boreholes within the proposed CHPC building footprint.
- Collection of representative samples analysis at NATA-accredited laboratories for a range of contaminants of potential concern (CoPC) and parameters to inform the identification of acid sulfate soils.
- Preparation of this DSI report that collates field and laboratory data from the investigation and presents an interpretation of this data relative to the investigation objectives outlined in Section 1.3.

2. SITE INFORMATION

2.1 SITE IDENTIFICATION SUMMARY

The site is irregular in shape with an approximate area of 7 hectares and is located at the northern end of the University of Wollongong Innovation Campus located at 7-9 Squires Way, Fairy Meadow NSW. The site is located approximately 3km north of the Wollongong CBD. Table 2.1, below, provides a summary of the site title identifiers and general site description.

Table 2.1 – Site identification summary

Item	Description
Street Address	7-9 Squires Way, Fairy Meadow NSW 2519
Title Identifiers	Northern and eastern portions of Lot 1, DP1172135 Lot 2, DP1172135
Site Area	7 hectares (approximate)
Local Government Area (LGA)	Wollongong LGA
Local Environment Plan	*Wollongong Local Environmental Plan (LEP) 2009*
Current Zoning	SP1: Special Activities
Current Site Use	The site is currently developed with open sporting fields, internal asphalt-paved access roads and pedestrian footpaths. Innovation way traverses the central-southern and central-western portions of the site. **Central portion:** Three heritage-listed buildings are present in the centre of the site, with frontage onto Innovation Way, currently used as a childcare facility, university bookshop and administrative building. An asphalt paved carpark adjoins the buildings to the south. **Eastern portion:** Grass-covered open space / recreational areas. **Southern portion:** Predominantly grass-covered open space, with moderate tree cover to the south. A small asphalt-paved carpark is located in the southern portion of the site, with a fenced-off groundskeeping / gardening depot adjacent to the north of the carpark. **Western portion:** Grass-covered open space, with a concrete paved footpath for pedestrian egress through the south-western portion of the site.

	Northern portion: Grass-covered playing fields / open space, with concrete paved footpath providing egress through the north-eastern portion of the site. Trees along northern
Proposed Site Use	Proposed site for the new St George Illawarra Dragons CHPC, comprising training / administrative facilities, sporting grounds / open space and paved asphalt car parking (further described in Section 1.2).
Surrounding Land Use	**North:** Low-medium density residential, Elliotts Road, cricket grounds to the north-east
	East: Squires Way, Puckeys Estate Nature Reserve (30m east – comprising rainforest / coastal marshland), Puckeys Beach beyond (300m east). Small stream system (Towradgi Arm) also located within Puckeys reserve (ranging from 70-180m from the site) and drains toward the south.
	South: Innovation Way, Campus East Dining Hall, medium-density residential (university campus residences) and associated car parking.
	West: Low-medium density residential, religious / church building and Cowper Street. Small creek (Cabbage Tree Creek) located 110m to the south-west and drains toward the south.

2.2 SITE OBSERVATIONS

A site walkover was undertaken by an environmental scientist from Coffey, with site observations summarised as follows:

- The site is situated on a low-lying area with minimal relief across the site. The playing fields and open space areas were generally flat, with ponded water observed in some areas following recent rainfall. The existing buildings in the centre of the site had been constructed on raised ground (mounded approximately 0.5-1m above surrounding ground level), indicating potential filling or landform modification during building construction.
- Three heritage-listed buildings are grouped together in the centre of the site, with frontage onto Innovation Way and an adjoining on-grade asphalt carpark. Building construction comprised weatherboard and rounded corrugated metal roofing. The north-western side building had a round roof and was inferred to be a Nissen hut. The south-western building had a similar rounded roof and was inferred to be of a similar age and origin. The buildings were currently being used as the UOW Alumni Bookshop (two small buildings to the west) and a childcare facility (a larger building to the east). The childcare facility also had a large outdoor play area adjoining to the east, with grass-covered areas, landscaped / mulch-covered garden beds and a COLA / toilet block facility constructed over pavement.
- The central and southern portions of the site comprising an asphalt roadway and carpark, generally sloping to the south-west. The asphalt carpark was observed to be extensively cracked; however, no significant staining or odours were noted during the site walkover. Several concrete slabs were also observed within the central carpark area.

- A small asphalt-paved carpark was observed in the south-eastern portion of the site, currently being used for student and staff parking. A small fenced off area was observed to the north of the carpark, surrounded by colourbond fencing and inferred to be a groundskeeping or gardening depot for the UOW campus. A small shed was observed (constructed on a concrete slab) and light machinery (including lawnmowers, trailers and other general gardening equipment) within the depot. The surface of the yard was observed to be unsealed, with gravel wearing course at the surface.
- Mature trees were observed around the northern, eastern and western site boundaries, in the southern portion of the site (near the groundskeeping depot) and in isolated areas along Innovation Way. Tree cover across the remainder of the site was minimal.
- No significant odours, staining or indicators of vegetation dieback were observed during the site walkover.
- Concrete guttering was present along Innovation Way with stormwater drains observed for surface water drainage. Grass-covered swale drains were also observed along the northern and eastern site boundaries, and spanning from the existing buildings to the eastern boundary.

Selected site photographs taken during the site walkover are presented in Appendix C.

2.3 ENVIRONMENTAL SETTING

2.3.1 Topography and Hydrology

Reference to the site survey plan (BCE Surveying, 2022) indicates that the site is relatively level and situated at low elevations, with ground surface elevations varying from 2.5m AHD in the north-eastern corner of the site to 4.0m AHD in the south-western corner, with the site elevations generally ranging from 3.0m to 3.5m AHD.

The site is located between 300m and 400m west of Puckeys Beach and the Tasman Sea. The undeveloped land between the beach and Squires Way (Puckeys Estate Reserve) contains a channelised creek (Towradgi Arm – approximately 180m to the east of the site) and small tributary streams, the closest being 70m to the east of the site. Cabbage Tree Creek is also situated approximately 150m to the west of the south-western corner of the site. Towradgi Arm and Cabbage Tree Creek both drain in a southerly direction to Fairy Creek (900m south of the site), which discharges into the Tasman Sea approximately1.25km south-southeast of the site. Given the low elevations of the streams, it is expected that all three stream systems may be tidally influenced.

Given the majority of the site is surfaced by grass, surface water is generally expected to infiltrate soils at the site. Water ponding was observed on site suggesting ground conditions may limit infiltration. Surface runoff in carparks and access roads is expected to flow into stormwater drainage systems and gradually into Fairy Creek.

2.3.2 Local Geology

The Geological Survey of NSW, 1:50,000 Wollongong Geological Map indicates that the site locality is underlain by Quaternary alluvium comprising sand, silt, gravel, and clay. Rocks belonging to either the Pheasants Nest formation or Budgong Sandstone, both of Permian age, are expected to underly the alluvium. The Pheasants Nest formation comprises interbedded lithic sandstone, coal, claystone, and siltstone whilst the Budgong Sandstone comprises red, brown, and grey lithic sandstone. Previous investigations at the Wollongong Innovation Campus site suggest it is more likely that the Pheasants Nest formation will be encountered beneath the alluvium at this site.

2.3.3 Local Groundwater and Registered Bores

The local site topography and proximity to the ocean suggests groundwater would be expected to occur near sea level. The nearest waterways noted above are influenced by tidal effects and likely to be brackish in nature.

A review of the publicly available groundwater bore records from the Bureau of Meteorology (BOM) identified one groundwater well within a 1km radius of the site, located approximately 800m to the west of the site and installed to a depth of 2.5m below ground level, however no standing water levels are included in the records. Records indicate the well had been installed for water supply purposes, and based on a review of aerial photography the bore appears to be located in an open space/parkland area. Given the brackish nature of groundwater in the area, and the urbanised catchment, consumptive use is considered unlikely however extraction for irrigation or other uses may be possible. Based on the shallow well depth of the well, extensive use of groundwater is also considered unlikely due to probable low yield or reliability with fluctuating groundwater levels.

2.3.4 Acid Sulfate Soils

A review of the Office of Environment and Heritage, Electronic Soil Profiling Maps (eSPADE) V2.1 indicates that the site is in an area defined as disturbed terrain. The map indicates a high probability of acid sulfate soils in the adjacent Puckeys Estate Reserve.

2.4 REVIEW OF PUBLIC RECORDS

2.4.1 List of Contaminated Sites Notified to the EPA

A search of the List of NSW Contaminated Sites Notified to NSW EPA was carried out on 18th February 2022 (list current as of February 2022). The site was not listed on the register, however a search identified three properties within a 1km radius of the site on the register, including a former Caltex fuel depot located 250m to the south-west (on the opposite side of Cabbage Tree Creek, with frontage onto Montague Street), and two active service stations approximately 600m to the north-west of the site on the Princes Highway. According to the register, the depot formerly required regulation under the *Contaminated Land Management Act 1997* (CLM Act), however the service stations were not listed to require regulation under the CLM Act.

2.4.2 NSW EPA Contaminated Land Public Record

A search of the NSW EPA Contaminated Land Public Record was carried out on 18th February 2022. The site was not listed on the record, however a search or the surrounding area identified one property within a 1km radius of the site on the record, which was the former Caltex fuel depot outlined above (on the List of Contaminated Sites Notified to the NSW EPA). The records indicate that the land was declared as a remediation site under the CLM Act in 2002, with the declaration notice repealed in 2010 following groundwater and vapour monitoring works by the proponent. The records do not indicate whether remedial works were undertaken at the site.

2.4.3 Protection of the Environment Operation Public Registers

A search of the NSW EPA POEO Public Registers was undertaken on 18th February 2022 for:

- Activities licensed by the NSW EPA under Schedule 1 of the POEO Act 1997.
- Unlicensed premises regulated by the EPA.

The Site was not identified in a search of these registers.

2.4.4 Former Gasworks

A search of NSW EPA List of Former Gasworks was undertaken on 18th February 2021. The search indicated that there are no known gasworks at or within 250m of the Site.

2.4.5 Waste Management Facilities

A search of the Australian Government National Waste Reporting Mapping Tool on 18th February 2021 did not identify any waste management facilities at or within 250m of the Site.

2.4.6 NSW EPA PFAS Investigation Program

The NSW EPA is leading an investigation program to assess the legacy of Per- and poly-fluoroalkyl substances (PFAS) use across NSW. Current investigations are focused on sites where it is likely that large quantities of PFAS have been used. Investigations are currently being carried out at 41 properties within NSW. A search of the NSW EPA website on 18th November 2021 did not identify properties at or within 1km of the Site which are being investigated for PFAS use under the NSW Government PFAS Investigation Program.

2.4.7 Other Sources

A publicly available information sheet from UOW (University of Wollongong, undated) indicates that the Innovation Campus contained the former Balgownie Migrant Worker's Hostel, which comprised up to 182 Nissen and Quonset Huts (army-style buildings with rounded corrugated iron roofing, and weatherboard construction), divided into six blocks. Each pair of blocks had a shared communal Kitchen/Dining Hall and Laundry facilities. The specific dates of construction or removal of the buildings from the site are unknown.

The information sheet indicates that the larger, easternmost building in the centre of the site (currently used as the childcare centre) is likely to be a former kitchen / dining hall facility. The two smaller buildings adjacent to the west are reported to be restored Nissen and Quonset Huts. The information sheet also notes that the site was subsequently used as a sports ground (Brandon Park) for a local football club, prior to establishment of the UOW Innovation Campus in 2006. Other information on the UOW website indicates some of the earliest College / University Accommodation buildings were established as early as 1962 (UOW, 2022).

The historical construction of the worker's huts or kitchen / dining hall is not described, however a recent HAZMAT survey undertaken by Coffey (reported separately, ref: *754-SYDGE295047 - UOW, Innovation Way North - HMDR – 19022022*) identified the following:

- Asbestos dust in a service room in the childcare facility
- Non-friable asbestos in various building materials (e.g., internal wall sheeting, ceiling panels, floor coverings / tiles, electrical cupboards etc) in the childcare facility and huts

- Lead-based paint on various surfaces of the buildings
- Lead-containing dust in ceiling voids within the childcare facility and floor surfaces
- Synthetic mineral fibres broadly within ceiling insulation in all buildings

2.4.8 Historical Aerial Imagery

A selection of historical aerial imagery was reviewed as part of the desktop review, including six images spanning from 1951 to 2005. The observed changes over time are summarised in table 2.2, below.

Table 2.2 – Summary of observed changes over time in historical aerial imagery

Year	Site area	Surrounding area
1951	• The site comprises cleared open space, with no tree cover or visible structures present.	• Small buildings adjacent to the north and west of the site, inferred to be low-density residential. • Elliotts Road and visible to the north, with Cowper Street and the northern portion of Montague Road to the west. • Land to the south appears to comprise cleared farmland. • Land to the east comprises Towradgi Arm and undeveloped space with moderate tree cover • Cabbage Tree Creek visible to the west, eastward of the current alignment.
1961	• Numerous small buildings (inferred to be huts associated with the Balgownie Migrant's Hostel) visible across the site. • Large building and access road present in the central portion of the site, inferred to be the former kitchen / dining hall currently used as a childcare building.	• Increase in residential development to the north and east of the site. • Additional small huts adjacent to the south and south-west of the site. • Construction of Squire's Way adjacent to the east of the site.
1970	• Visible removal of some of the huts in the southern portion of the site and replacement with slightly larger buildings (possible medium-density residential buildings)	• General increase in residential development to the north and west of the site. • Straightening (inferred channelisation) of Towradgi Arm to the east and visible filling and diversion / channelisation of Cabbage Tree Creek to the west. • Extension of Montague Street to the south-west and construction of larger buildings (inferred to be commercial or light industrial development)
1974	• Removal of numerous small structures in the north-western portion of the site, with open space remaining.	• Further increase in residential development to the north and west, and commercial / industrial development to the south-west. • Visible filling of former channel for Cabbage Tree Creek. • Playing fields visible to the north-east of the site.

Year	Site area	Surrounding area
1990	• Smaller buildings (inferred to be Nissen Huts) removed from the northern and central portions of the site. The existing childcare building and adjoining toilet block remains visible in the centre of the site. • Small buildings visible, including to the south of the existing childcare facility and other small buildings in the southern portion of the site (inferred to be residential or university accommodation) • Open space visible across the site, broadly resembling the current site layout.	• Various medium- to large-sized buildings constructed adjacent to the south-west, inferred to comprise medium-density residential or university buildings. • Playing fields visible to the south of the site within the current Innovation Campus footprint. • General increase in commercial / industrial development to the west.
2005	• Removal of small buildings to the south of the childcare centre to resemble the approximate current site layout. • Construction of a small access track or swale drain in the north-eastern portion of the site. • Increase in tree cover around the site boundaries.	• Demolition of larger buildings adjacent to the west and construction of two new buildings (inferred to be the existing university accommodation buildings. • Removal of an existing playing field and construction of the UOW Science Space Building and adjoining carpark to the south. • General increase in commercial / industrial development to the west.

2.5 INTEGRITY OF ASSESSMENT OF INFORMATION REVIEWED

The following sources of data were relied upon for this assessment:

- Public registers, records and maps maintained and provided by various government departments.
- Historical aerial photographs between 1951 and 2005 provided by NSW Land and Property Information.
- Observations made during the site walkover.
- Publicly available information on the UOW Campus site history

The observations made during the site walkover were generally consistent with the recent aerial photographs. Some uncertainty remains regarding actual site features, layout and use prior to 1951 (i.e., the earliest available aerial photograph), although based on historical information the site is understood to have comprised open space / farmland and was gradually developed over time. Coffey considers the historical data assessed was generally adequate, reliable and suitable with regard to the assessment objectives.

We note that a SafeWork NSW Hazardous Chemicals Database search was outside the scope of this assessment. However historical aerial photography suggests that the likelihood of petroleum storage tanks (including heating oil and diesel fuel) being present on the site is low. The site walkover did not identify significant quantities of stored chemicals or indicators of above or below ground fuel storage tanks. While the groundskeeping / gardening compound in the southern portion of the site may contain smaller volumes of oil, fuel or herbicides in drums or jerry cans, no above or below ground fuel storage tanks were observed during the site walkover or review of historical information.

2.5.1 Summary of Potentially Contaminating Activities

Based on the findings of the Site History review and desktop study, various potentially contaminating activities are understood to have been undertaken at the site, including:

- Importation and subsequent demolition / removal of buildings containing hazardous materials used in building construction and demountables
- Use of fill material of unknown quantity and origin (including landform modifications and construction of playing fields / existing buildings onsite)
- Potential installation of underground services containing asbestos-containing materials (ACM)
- Potential use of pesticides, herbicides and insecticides at the site during historical agricultural use and subsequent maintenance of the Migrant's Hostel and Innovation Campus grounds.
- Inflow of groundwater / flood waters (given the site low elevation) potentially impacted by diffuse or background contamination sources (including the commercial / industrial developments and former fuel depot to the south-west).

A conceptual site model and exposure assessment are presented in Section 7 of this report. Potentially contaminating activities identified in the site history review and desktop study were used considered in developing the DSI methodology, which is further discussed in section 3 of this report.

3. INVESTIGATION METHODOLOGY

3.1 GROUND INVESTIGATION

3.1.1 Sampling Rationale

The scope of works for this investigation was prepared to investigate the potential Areas of Environmental Concern (AEC) and Contaminants of Potential Concern (CoPC) identified during the desktop review and site walkover.

The DSI fieldwork incorporated 28 soil sampling locations distributed across the site in accessible locations to broadly investigate the contamination status of soils and characterise fill material present. The investigation also included installation of five groundwater monitoring wells (BH6 to BH10) and two subsurface gas wells (BH1 and BH2) to investigate the contamination status of groundwater levels and potential for hazardous ground gas at the site. The groundwater monitoring wells were positioned along the eastern and southern boundaries of the site to assess groundwater quality at the inferred down-hydraulic gradient boundary. Ground gas wells were positioned to assess gas conditions in the area where it is proposed to establish the CHPC training/administration structure.

Coffey notes that the overall density of soil sampling locations is less than the minimum number of samples (50 locations) recommended in the Sampling Design Guidelines (NSW EPA, 1995) for a site of this size to detect a hotspot of known diameter with 95% confidence. While this reduces the confidence level of the sampling to detect a contaminant hotspot, there were no particular point sources of potential contamination noted in the desktop review of historical and publicly available information. In summary, the investigation scope is considered to provide an adequate assessment of the contamination status of the site.

3.1.2 Scope of Intrusive Works

Intrusive investigation was conducted at the site in two different time periods: namely, 7th to 16th December 2021 and 11th to 14th January 2022. The geotechnical and contamination investigations were undertaken concurrently, and comprised:

- Drilling of ten boreholes with Standard Penetration Tests (SPT) at selected locations and depth intervals using a track mounted drill rig. The boreholes included:
  - Five cored boreholes (BH1-BH5) in the proposed building location drilled to depths ranging from 19.76m to 22.23m, using auger and NMLC rock coring methods to identify and sample soil and rock stratigraphy.
  - Five augered boreholes (BH6-BH10) drilled to depths of 5.0 m to 6.5 m around the site perimeter and subsequent installation of three groundwater and two ground gas monitoring wells for ongoing monitoring conditions. Data loggers were installed in wells BH6, BH7 and BH8 to continually monitor groundwater levels for a period of approximately 3 weeks (27 January to 16 February 2022).
- 18 Cone Penetration Tests (CPT) undertaken across the site as part of the geotechnical investigation (designated as CPT1 to CPT18), ranging in depths from 5.0m to 14.0m bgl, and positioned mostly in proposed playing field areas. Soil cores were retrieved from each CPT investigation location to typical depths from ground surface to 1.2mbgs to observe shallow soil conditions and collect soil samples for laboratory analysis.

Consultants from Coffey carried out all fieldwork including logging of subsurface profiles, collection of samples and construction of groundwater and subsurface gas wells. A site plan provided in Figure 1, Appendix B, outlines approximate test locations across the site. Subsurface conditions are summarised in Section 6.1 of this report and detailed in the borehole and test pit logs included as Appendix E.

3.1.3 Soil Sampling

Disturbed soil samples were collected from the boreholes for a range of geotechnical and chemical analysis, with soil sampling works undertaken as follows:

- Samples were collected from the driven split tube used to conduct Standard Penetration Tests (SPT) or direct from the drill rig auger attachment from BH1 to BH10. Soil samples were collected from the soil core retrieved from the direct push attachment of the CPT rig (CPT1 to CPT18).
- Soil samples were collected from each borehole at regular depth intervals (near-surface (0.1-0.2m), 0.4-0.5m, 1.0-1.1m, and then typically at half-metre intervals thereafter until target depth/refusal was reached), or where suspected contamination was noted (e.g., stained or odorous soil, or relatively elevated soil headspace readings).
- Soil samples for chemical analysis were placed into clean, glass jars supplied by the laboratory, filled with minimal headspace and then sealed with a Teflon-lined lid. Samples selected for PFAS analysis were placed into clean, plastic tubs supplied by the laboratory. Samples submitted for SPOCAS analysis were placed into clean, zip lock plastic bags and sealed after expelling as much air as possible.
- Soil samples were collected using disposable nitrile gloves, which were changed between samples to reduce the potential for cross-contamination between soil layers. Reusable equipment (e.g., split tubes, auger attachments and hand tools) were decontaminated between sampling locations using Liquinox phosphate-free detergent and tap water.
- An asbestos sample bag was collected at 0.1-0.2m bgl (near-surface) and 0.4-0.5m bgl depth intervals in each borehole, with deeper asbestos sample bags collected only where fill material was observed.
- Soil from each sample depth was also placed in a zip lock bag. The bag was sealed, and the soil agitated. Soil headspace measurements were made by piercing the bag with the tip of a Photoionisation Detector (PID) with a 10.6eV lamp calibrated using 100ppm isobutylene gas. The maximum soil headspace measurement in parts per million (ppm) was recorded on the field log. A field calibration certificate for the PID is included in Appendix I.

3.1.4 Monitoring well Installation

Five groundwater monitoring wells were installed in boreholes BH6 to BH10, following completion of drilling works. Subsurface gas monitoring wells were also installed in in separate shallow soil bore excavated directly adjacent to BH1 and BH2.

Groundwater wells were constructed with a 3m screen placed at the toe of the well, with solid casing up to surface. A gravel annulus was placed around the screened section to allow groundwater inflows into the standpipe, with a 0.3 – 0.6m bentonite seal placed above the screen to inhibit surface water infiltrating into the wells. Gas monitoring wells were constructed in a similar manner to the piezometer wells, but targeted material to 2.5m depth below ground.

A well cap was installed in groundwater wells and gas cap in subsurface gas wells to prevent influx of surface runoff, and to contain subsurface gas in the well casing. All wells were surfaced with a

gatic cover flush with surrounding ground surface. Well construction details are summarised in Table 3.1, below and described in detail on the logs presented in Appendix E.

Table 3.1 – Summary of monitoring well installation details

Location	Well purpose	Approximate installation depth intervals (m bgl)				Surface / finish*
		Slotted Screen	Sand	Bentonite seal	Casing	
BH6	Groundwater Monitoring Wells	6.3 – 3.3	6.3-3.3	3.3 – 3.0; 1.0 – 0.7	3.3m to surface	Gatic cover
BH7		5.0 – 2.0	5.0 – 1.6	1.6 – 1.15	2.0m to surface	Gatic cover
BH8		6.3 – 3.3	6.3-3.3	3.3 – 3.0; 1.0 – 0.7	3.3m to surface	Gatic cover
BH9		5.0 – 2.0	5.0 – 1.5	1.5 – 0.9	2.0m to surface	Gatic cover
BH10		6.5 – 3.5	6.5 – 2.8	2.8 – 2.2	3.5m to surface	Gatic cover
BH1	Subsurface gas wells	2.5 – Surface	2.5 – 0.3	0.3 – 0.0	-	Gatic cover
BH2		2.5 – Surface	2.5 – 0.3	0.3 – 0.0	-	Gatic cover

Following installation, groundwater wells were purged dry using a disposable bailer to remove drilling fluids and soil fines introduced during drilling/well construction and improve the hydraulic connection to the surrounding water bearing zone.

3.2 GROUNDWATER AND GAS MONITORING

3.2.1 Groundwater Monitoring

Following the site investigation, an environmental scientist from Coffey reattended the site on 27 January 2022 to gauge groundwater levels, measure field water quality parameters and collect water samples for further analysis. Groundwater monitoring included:

- Recording standing water levels, total well depth and presence / absence of non-aqueous phase liquid (NAPL) using a dual-phase Interface Probe (IP). The IP was decontaminated between wells using phosphate- and PFAS-free Liquinox detergent.
- Collection of groundwater samples and water quality parameters using hydrasleeves. Water recovered from the hydrasleeves was placed into laboratory-supplied sample bottles containing appropriate preservatives, with water quality parameters measured using the leftover water from the Hydrasleeves (i.e., after sample collection was completed). Samples collected for metals analysis were also filtered in the field using a disposable 0.45µm filter.
- Water samples were immediately placed into an ice-filled cooler and dispatched to the laboratories for selected analysis under chain of custody.

Groundwater sampling observations are summarised in Section 6.2, with groundwater sampling forms included in Appendix F.

Following completion of groundwater sampling, groundwater level loggers were placed in three wells (BH6, BH7 and BH9) to continuously monitor groundwater levels at 30min intervals over a three-week period. Hydrographs from the groundwater loggers is presented in Appendix J, with Hydrographs summarised in section 6.2.1 of this report.

3.2.2 Subsurface Gas Monitoring

Subsurface gas monitoring was carried out in accordance with NSW EPA guidelines using a calibrated landfill gas meter (GFM430 Landfill Gas Analyser) provided by Airmet Scientific (calibration certificate provided in Appendix I). The monitoring process involved the following:

- Connection of the instrument to the well cap using a quick-connect fitting.
- An initial stabilised gas flow reading (in L/hr) was recorded, followed by purging of the well using the gas meter.
- During purging, methane, carbon dioxide, oxygen, hydrogen sulphide and carbon dioxide were recorded at regular intervals for a minimum of 3 minutes or continued until the readings stabilised.
- After purging and collection of gas measurements, the well cap was removed and the water level in the base of the gas well was measured.
- The gas well cap was replaced firmly to seal the well for future monitoring rounds.

Barometric pressure and differential pressure (i.e., the pressure in the well headspace relative to atmospheric pressure) were also recorded at each location.

3.3 LABORATORY TESTING

Soil and groundwater samples collected during fieldworks were placed immediately into ice-filled eskies, with selected samples dispatched to Eurofins and ALS laboratories under chain of custody control for analysis. Copies of the chain of custody documents and laboratory results are included in Appendix H.

Eurofins and ALS laboratories hold NATA-accredited analytical methods for the range of Contaminants of Potential Concern (CoPC) analysed. Up to 2 primary samples were generally selected from each borehole (typically from shallow soils or fill material) and analysed for CoPC. The remaining soil samples were placed on hold at the analytical laboratory. Table 3.2, overleaf, summarises the environmental analysis undertaken for the contamination assessment.

Table 3.2 – Summary of environmental laboratory analysis undertaken

Analyte	No. Primary Samples Analysed	
	Soil	Groundwater
Heavy Metals (As, Cd, Cr, Cu, Ni, Hg, Pb, Zn)	38	5
Total Recoverable Hydrocarbons (TRH)	41	5
Monoaromatic Hydrocarbons (BTEX)	41	5
Polycyclic Aromatic Hydrocarbons (PAH)	41	5
Organochlorine / Organophosphate Pesticides (OCP/OPP)	20	-
Polychlorinated Biphenyls (PCB)	20	-
Per- and poly-fluoroalkyl substances (PFAS)	2	5
Asbestos	17	-
ASS – SPOCAS Analysis	2	-

3.3.1 Field Quality Control Samples

In addition to the primary samples collected (outlined in table 3.2), quality control / quality assurance (QA/QC) samples were collected and analysed as follows, in accordance with the requirements of the NEPM (2013):

- Four (4) field split duplicate intra-laboratory soil samples (DUP1 to DUP4) and two (2) triplicate inter-laboratory soil samples (Trip 1 and Trip 3) to assess replicability of soil analytical results.
- One (1) field split duplicate intra-laboratory groundwater sample (DUP-1) to assess replicability of water analytical results.
- Three (3) soil trip blank samples and one (1) water trip blank sample to assess potential for cross-contamination of volatile hydrocarbons during transport to the laboratory.
- Three (3) trip spike samples to assess potential loss of volatile hydrocarbons during transit to the laboratory.
- One (1) field blank to assess potential PFAS cross-contamination during fieldworks.
- Three (3) equipment rinsate samples collected from reusable soil sampling equipment (hand tools) and groundwater sampling equipment (interface probe) to assess potential cross-contamination of samples during field sampling works.

Field duplicate results and calculated relative percentage difference (RPD) values for soil and water samples are presented in Appendix G, Tables 3 and 4 respectively. Analytical results for trip blank / spike samples and rinsate samples are presented in Appendix G, Tables 5 and 6 respectively.

4. ASSESSMENT CRITERIA

In accordance with industry guidance and legislative requirements, environmental assessment criteria for this assessment have been derived from the following guidelines:

- Schedule B(1) '*Guideline on the Investigation Levels for Soil and Groundwater' of the National Environmental Protection (Assessment of Site Contamination) Measure 1999* (the NEPM) as amended (NEPC, 2013).
- CRC Care Technical Report No. 10, *Health Screening Levels for Petroleum Hydrocarbons in Soil and Groundwater*, *2011* (CRC CARE 2011).
- Australian and New Zealand Environment Conservation Council (ANZECC) (2018) Australian and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality.
- PFAS National Environmental Management Plan 2.0 (PFAS NEMP), Heads of EPAs Australia and New Zealand (HEPA), 2020.

4.1 SOIL ASSESSMENT CRITERIA

Environmental criteria have been adopted for this assessment based on the proposed developments and future land use as a sporting complex, including outdoor playing fields and general open space areas with accessible soils, along with indoor commercial / training and administrative facilities. Based on the above, the following exposure scenario is considered appropriate for this assessment:

- Public open space such as parks, playgrounds, playing fields, secondary schools and footpaths.
- Commercial / industrial such as shops, offices, factories and industrial sites.

Soil assessment criteria are outlined in Table 4.1, below, and presented in Table 1 in appendix G. As a conservative measure, soil assessment criteria for public open space have been generally applied (with exceptions outlined below).

Table 4.1 – Summary of soil assessment criteria applicable for the assessment

Criteria	Source	Criteria relevant to	Applicable pathway
Human Health Based			
Soil HILs	ASC NEPM 2013	Public open space land use (HIL C) All soil depths and types	Direct contact (dermal contact and incidental ingestion and inhalation of soil/dust particles)
	PFAS NEMP 2020	Public open space land use (HIL C) All soil depths and types	
Soil HSLs (direct contact)	CRC CARE 2011	Recreational/open space land use (HSL-C)	Direct contact (dermal contact and incidental ingestion and inhalation of soil/dust particles)

Criteria	Source	Criteria relevant to	Applicable pathway
		Intrusive maintenance worker (shallow trench) (HSL-D) Fine soil type and depth of 0-<2 m	
Soil HSLs (vapour intrusion)	ASC NEPM 2013	Commercial/industrial D soil for vapour intrusion (1)	Inhalation of soil vapours in indoor areas / classrooms
Ecological Based			
Generic Ecological Investigation Levels (EILs) for lead, arsenic, DDT and naphthalene	ASC NEPM 2013	Urban residential and public open space land use <2m depth	Terrestrial biota
Conservative EILs for zinc, lead, copper, nickel and chromium – See Table 4.2.	ASC NEPM 2013	Urban residential and public open space land use <2m depth	Terrestrial biota
Ecological Screening Levels (ESLs) for TRH, BTEX and benzo(a)pyrene	ASC NEPM 2013	Urban residential and public open space land use <2m depth	Terrestrial biota
Ecological Guideline Values for Soil	PFAS NEMP 2020	All land uses – direct and indirect exposure	Terrestrial biota
Petroleum Hydrocarbon Management Limits			
Management Limits for TPH fractions F1-F4 in soil	ASC NEPM 2013	Residential, parkland and public open space land use (Fine soil texture)	Formation of LNAPL, fire and explosion, and property damage

Notes: 1) HSL-C criteria are non-limiting for vapour intrusion in outdoor areas, however this exposure scenario is not considered applicable for indoor administrative and training areas as part of the

proposed development. As such, Commercial / Industrial D criteria have been considered for vapour intrusion as a conservative measure.

4.1.1 Ecological Investigation Levels (EILs)

Table 4.2 – Summary of physiochemical parameters used to determine site-specific EILs

Physiochemical Parameter	Average Result (used for EIL derivation)
% Moisture	10%
% Clay (1)	10%
pH*	6.1
Cation exchange capacity (CEC)	11 meq/100g
Total Organic Carbon (TOC)	4.2%

Notes: 1) %clay derived from Particle Size Distribution results (reported separately in Coffey 2022a) and site observations of general soil composition.

To assess the impact on site vegetation from contamination within the upper 2.0m of the subsurface, contaminant concentrations (excluding TRH, BTEX and naphthalene) were assessed against the EILs from the amended NEPM (NEPC, 2013), derived using the physiochemical parameters in table 4.2 above, and applicable to the following settings:

- 'Urban residential / public open space' (aged contaminants)
- 'Commercial / Industrial' (aged contaminants)

4.1.2 Aesthetic Considerations

Based on the proposed site, aesthetics have been considered as part of this assessment. The following characteristics are considered indicative of soil materials that would have the potential to present unacceptable aesthetic impacts:

- Surface soil materials that exhibit heavy staining, or emit hydrocarbon odours that are perceptible within 2m of the soil investigation area.
- Anthropogenic wastes in near-surface soil material onsite.
- Visible hydrocarbon sheens on groundwater, ponded surface water or observable in the swale / drainage channels in the site.

4.1.3 Asbestos

For asbestos in soil, a screening level of 0.1g/kg (0.01 % w/w equivalent) was adopted based on the laboratory detection limit for analysis of asbestos in non-homogenous samples using the methodology outlined in *Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples (AS4964-2004)*. Furthermore, an assessment criterion of 'no respirable fibres' was adopted; a detection of respirable fibres would indicate an exceedance of the assessment criteria.

4.2 GROUNDWATER ASSESSMENT CRITERIA

The adopted groundwater assessment criteria were based on the following:

- Default Guideline Values (DGVs) from the ANZECC (2018) Australian and New Zealand Guidelines (ANZG) for Fresh and Marine Water Quality.
- Interim Ecological Water Quality Guideline from the PFAS NEMP (2020)
- Australian drinking water guidelines (NHMRC & NRMMC 2004).

It is important to note that the DGVs are not threshold values at which an environmental impact is likely to occur if exceeded. Rather, if the Default Guideline Values (DGVs) are exceeded, then further action is required which may include either further site-specific investigations to assess whether there is a potentially adverse effect, or the implementation of management/ remedial actions.

Groundwater abstraction or consumptive use is not expected as part of the ongoing operation of the proposed CHPC.

Regional groundwater is expected to generally flow to towards Cabbage Tree Creek or Towradgi Arm, and eventually into the Tasman Sea (approximately 1.25km south of the site).

Given the close proximity of the site to the ocean, the marine water DGVs are considered to be applicable for investigating contaminant concentrations in groundwater at the Site. The basis of the ANZG guidelines is that the DGV values for the protection of 95% of aquatic ecosystems should be used except where contaminants are potentially bio-accumulative, in which case the DGV for protection of 99% of species should be used. Similarly, the PFAS NEMP recommends 95% protection levels to be applied to slightly to moderately disturbed ecosystems. Therefore, DGVs were selected for protection of 95% of marine species for the majority of contaminants for initial comparison purposes.

To assess the potential impacts of the on the recreational users of Towradgi Arm (within Puckeys Estate Reserve) downstream, groundwater analytical data have also been compared against the National Health and Medical Research Council (NMHRC) Guidelines for Managing Risks in Recreational Water (NMHRC, 2008).

Schedule B1 of the ASC NEPM also provides HSLs for vapour intrusion, based on the depth of groundwater and soil type for the Site, for various exposure scenarios. Groundwater HSLs for vapour intrusion are non-limiting for recreational land use, however for this site the groundwater HSLs applicable to “Commercial / Industrial” land use (HSL-D) for vapour intrusion (clay soil texture, groundwater depth 2m to <4m) have been adopted for indoor training areas and administrative facilities as a conservative measure.

5. DATA QUALITY ASSESSMENT

5.1 ENVIRONMENTAL QUALITY ASSURANCE AND QUALITY CONTROL

A data validation assessment was undertaken to assess Data Quality Indicators (DQIs) for field and laboratory data collected for this project. As part of this assessment the following tables relating to Quality Assurance / Quality Control (QA/QC) are included in Appendix G:

- Comparison between field duplicate soil samples – Table 3 (soil duplicate RPD summary).
- Comparison between field duplicate groundwater samples – Table 4 (water duplicate RPD summary).
- Results of trip blank and trip spike samples – Table 5 (QA/QC sample results).
- Results of rinsate samples – Table 6 (QA/QC sample results).

Analytical laboratory reports for soil samples are included in Appendix H.

The works were undertaken in accordance with the Coffey Standard Operating Procedures (SOPs) and where deviations have occurred, they are justified through the sampling conducted in accordance with the National Environment Protection (Assessment of Site Contamination) Measure 1999 (the 'NEPM') (NEPC, 2013) as detailed below in Section 5.1.1.

The following sections discuss and summarise the key results of this assessment along with non-conformances identified. The material effect of non-conformances on the conclusions of this report was also assessed.

5.1.1 Field Quality Control Procedures

Field quality control measures were consistent with the quality control plan presented in Coffey SOPs, and included the following:

- Sampling was performed by qualified Coffey geo-environmental professionals in accordance with the procedures outlined in Coffey's SOPs, which are based on industry accepted protocols for environmental sampling and are consistent with Schedule B(2) of the NEPM (NEPC 2013).
- Calibration of field instruments in accordance with manufacturer's instructions. Equipment calibration certificates are included in Appendix I.
- Samples were placed in appropriate sample containers (glass jars with Teflon seals, snap-lock asbestos sample bags, and Teflon-free PFAS sampling tubs), supplied by the contract laboratories, and labelled with a unique identifying number.
- Samples were transferred to and stored in ice-filled coolers and transported to NATA-accredited laboratories under chain of custody control (shown in Appendix H).
- Carrying into the field trip spike and trip blank samples, including dispatch to the laboratory for analysis of volatile compounds to assess the potential for loss of, or cross contamination by, volatile contaminants during transport and sample preparation at the laboratory (Table 5 in Appendix G).
- Collection of duplicate and triplicate samples being:
    - Soil samples split by taking small representative amounts and placing an amount in each jar/bottle until the jar/bottle had been filled with minimal headspace.
    - Collection and analysis of four (4) intra-laboratory and two (2) inter-laboratory blind coded soil duplicates. Relative Percentage Differences (RPDs) calculated between primary and

inter-laboratory and intra-laboratory duplicate soil samples are provided in Table 3 in Appendix G.

- Collection and analysis of one (1) intra-laboratory blind coded water duplicate. Relative Percentage Differences (RPDs) calculated between primary and intra-laboratory duplicate groundwater samples are provided in Table 4 in Appendix G.
- Decontamination of sampling equipment used in soil sample collection (hand auger, drill augers and SPT split tube sampler) between samples, and the interface probe between wells, with PFAS- and phosphate-free detergent (Liquinox) and potable water.
- Collection of two rinsate samples (one from the drill rig attachments and one from the hand auger) during soil sampling, and one additional rinsate during the groundwater sampling works, to assess the potential for cross-contamination of samples from reusable sampling equipment.

5.1.2 Data Quality Assessment

The field and laboratory quality control (QC) data was assessed against criteria described in the relevant sampling and analysis quality assurance / quality control plans. The data quality assessment is summarised as follows:

Sample Handling

In general, samples were reported to have been received by the laboratory in good condition and suitable for analysis (stored in appropriate sample containers with zero headspace). Water (from melted ice) was observed to have seeped into asbestos sample bags in laboratory batch 841989 (including samples collected from BH6), however the laboratory advised the samples could be tested in accordance with their NATA-accredited method. Given that asbestos does not degrade in water, this was not considered to have an adverse effect on the results or the outcomes of the assessment.

Minor discrepancies were noted between the chain-of-custody documents and sample labels by the laboratory upon receipt, which were resolved upon scheduling analysis. Some PFAS containers were also noted by the laboratory to be missing; however, the laboratory was contacted, and alternative analysis was scheduled. The alternative analysis was selected on samples at similar locations and depths with suitable containers, which were considered to be a reasonable substitute for the missing samples. As such, the missing samples are not considered to have affected the outcomes of this assessment.

Precision / Accuracy

Low PID screening measurements (typically <10 ppm) were consistent with reported laboratory concentrations, with volatile hydrocarbons (TRH C6-C10 and VOCs) generally reported below the laboratory Limit of Reporting (LOR) for all samples (except for a low-level detectable concentration of TRH C_6-C_{10} in sample BH5_0.1-0.2).

Field QA/AC (duplicates, rinsate samples, trip blanks)

RPDs exceeding the upper control limits were generally not recorded in the soil duplicate/triplicate pairs, except for the following:

- Intra-laboratory duplicate DUP2 (duplicate of primary sample CTP15_1.1-1.2) exceeded control limits for chromium (149%) and zinc (129%)
- Intra-laboratory duplicate DUP4 (duplicate of primary sample BH10_0.1-0.2) slightly exceeded control limits for zinc (57%)

The elevated RPDs for lead and zinc indicate variability in heavy metals concentrations, potentially due to heterogeneous nature of the sample matrix. It is noted that the above concentrations were

below the assessment criteria in both primary and duplicate samples and therefore it is assessed that the reported variability has not affected the assessment outcome.

Other high RPDs were recorded in samples with low analyte concentrations. Coffey notes that higher RPDs can be associated with low analyte concentrations, and in accordance with Coffey SOPs it is considered that no RPD control limit applies to concentrations less than 10x the laboratory limit of reporting. As such, it is considered that the elevated RPDs recorded in soil samples do not affect the outcome of the assessment, however all results (from primary samples and duplicate pairs) were considered as part of this assessment.

RPDs were all within upper control limits for groundwater primary sample BH9 and duplicate sample DUP-1. No inter-laboratory groundwater duplicate samples were collected due to the small size of groundwater sample population, however the ratio of intra-laboratory samples collected (20%) exceeds the minimum recommended frequency (5%). As such, replicability of groundwater samples is considered to have been adequately assessed.

Trip blank samples all recorded concentrations below the LOR, while trip spike recoveries were within the acceptable ranges, indicating a low potential for cross contamination of samples and proper storage of soil samples during transport to the laboratory. Rinsate and field blank samples collected during the soil sampling also reported analytes below the LOR, indicating a low likelihood for potential cross-contamination between samples or from environmental factors during soil sampling fieldworks. The rinsate sample collected during groundwater sampling works reported a low-level detectable concentration of zinc, albeit below the concentrations detected in all water samples, and below the assessment criteria adopted for this assessment. As such, the detectable concentration of zinc in the rinsate sample is not expected to affect the outcomes of this assessment.

Laboratory QA/QC

A reduced frequency of duplicates, matrix spikes and/or laboratory control spikes was applied for PFAS testing in sample batches 848983 and 81250 (due to the sample batches containing less than 10 samples for PFAS analysis).

For all the batches, laboratory quality control samples (spikes, duplicates, blanks, etc.) generally met the predetermined control limits established by the laboratories, or (in the case of duplicates) met with Coffey's acceptable limits, except for the following:

- Laboratory duplicate %RPDs were reported by the primary laboratory exceeding the recommended acceptance criteria for metals (including chromium) for two samples. Further analysis was undertaken by the laboratory and the elevated RPDs were attributed to sample heterogeneity.
- Matrix spike recovery (37%) was reported outside of the recommended acceptance criteria (70%) for dimethoate in one sample. The laboratory reported that an acceptable recovery was obtained for the laboratory control sample, and the elevated RPD for PCB recovery was attributed to sample matrix interference.

Considering the above discussion, Coffey concludes that the analytical results are representative of the characteristics of the soil and groundwater at the sample locations at the time of sampling.

6. RESULTS OF INVESTIGATION

6.1 SUMMARY OF SUBSURFACE CONDITIONS

For the purpose of environmental characterisation of the subsurface conditions, the soil and rock profiles encountered during the investigation have been characterised into the units shown below in Table 6.1.

Table 6.1 – Generalised subsurface conditions and inferred geological units

Unit	Name	Description	Typical Unit Thickness	Typical Soil Consistency / Rock Strength
U1	Existing Fill	CLAY, Gravelly CLAY, and Gravelly SAND, low to medium plasticity, fine to medium grained gravel, traces of sand, concrete fragments, rootlets	0.4m to 1.0m	-
U2	Alluvium	CLAY, low to medium and medium to high plasticity	2.5m to 4.0m	Stiff
U3	Alluvium (1)	Sandy CLAY and Clayey SAND medium to high plasticity, fine to medium grained sand, fine to medium grained, low to medium plasticity clay.	8.0 to 9.0m	Very Stiff
U4	Residual	Sandy Clay, medium to high plasticity fine to medium grained sand. Residual and/or extremely weathered material derived from sandstone	2.5m to 4.0m	Very Stiff to Hard
U5	Rock (2)	Sandstone, Siltstone, and interlaminated Sandstone and Siltstone, moderately, and slightly weathered.	5.0m (maximum penetrated)	Medium to High Strength

Notes: (1) A 3m thick medium dense sand layer was encountered in BH2 at 9m depth.
(2) A 2m thick very low strength extremely and moderately weathered zone where core loss was encountered in BH4 at 17m depth.

6.1.1 Visual / Olfactory Indicators of Contamination

Soil excavated from the test pits and boreholes were observed for visual and olfactory evidence of potential contamination, with observations summarised as follows:

- Anthropogenic materials were not observed in the boreholes or at the ground surface, except for minor glass and concrete fragments in fill material in BH3 (up to 0.8m below ground level).
- Suspected asbestos-containing material was not observed in the boreholes or at the ground surface.
- No significant vegetation dieback was observed at the ground surface.

- PID measurements ranged from 0.0 parts per million (ppm) to 11.5ppm, although were typically below 5ppm, which indicates a low likelihood for the presence of volatile hydrocarbons in soils encountered at the site.
- Malodourous soils were generally not encountered at the site; however, slight organic / compost odours were noted in boreholes BH3, BH7 and BH10 (fill material, at typical depths <0.3m bgl).
- Stained soils were generally not encountered at the site, except for dark staining in alluvial clayey sand in borehole BH5 (4.5m bgl), inferred to indicate potentially indicate Acid Sulfate Soils (ASS) at the site
- No odours, hydrocarbon sheens, non-aqueous phase liquids (NAPL) or other indicators of contamination were noted during groundwater sampling fieldworks.

6.2 GROUNDWATER INVESTIGATION

6.2.1 Groundwater Levels

A summary of the groundwater levels observed during the investigation are summarised below in Table 6.2. However, groundwater levels may vary at this site in response to climatic conditions, tidal influences due to the proximity to the ocean and groundwater recharge arising from the proximity to a significant escarpment further to the west. Those responses may not be immediate.

Table 6.2 – Summary of groundwater observations during drilling works

Location	Ground Surface Elevation (mAHD)	Groundwater Level observed at time of investigation	
		(mBGL)	(mAHD)
BH1	3.0	5.3	-2.1
BH2	2.5	3.2	-0.7
BH3	3.0	3.5	-0.5
BH4	3.5	5.0	-1.5
BH5	2.5	3.4	-0.9
BH6	2.5	4.6	-2.1
BH7	4.1	3.0	1.1
BH8	2.2	4.7	-2.5
BH9	2.7	0.3	2.4
BH10	3.4	5.5	-2.1

Groundwater logger data indicates generally stable groundwater levels, with groundwater levels fluctuating less than 0.5m over the 3-week period measured (27 January to 16 February 2022). Hydrographs included in Appendix J show logged groundwater levels over time, compared with manually gauged data.The results indicate groundwater levels ranged between:

- 1.67 – 2.05m AHD in monitoring well BH6
- 1.77 – 2.22m AHD in monitoring well BH7
- 1.24 – 1.71m AHD in monitoring well BH9

Groundwater levels indicate probable groundwater flow towards the east and south-east, generally consistent with regional topography and surface water flows towards the Tasman Sea. The hydrographs slight increases in groundwater levels following rainfall events, indicating climatic influences and recharge in response to rainfall. Tidal fluctuations were not observed in the hydrographs, however high electrical conductivity measurements (discussed below) indicate potential interactions or influx of brackish groundwater sourced from the ocean.

6.2.2 Water Quality Measurements

Field water quality measurements were collected during groundwater sampling works, as summarised in Table 6.3 below.

Table 6.3 – Summary of field water quality measurements during groundwater sampling

Sample location	Sample date	Dissolved Oxygen (mg/L)	Electrical Conductivity (µS/cm)	pH (pH units)	Redox Potential (corrected)* (mV)	Temperature (°C)
BH6	27 January 2022	1.27	13927	6.63	-100.4	22.3
BH7		1.81	2182	6.19	+55.6	22.9
BH8		1.26	12559	6.48	-106.1	22.0
BH9		1.01	13720	5.46	+67.9	20.6
BH10		2.73	9823	5.97	-0.1	22.4

Groundwater quality measurements indicated slightly acidic conditions across all boreholes, with the lowest pH recorded in BH10, across gradient to the south of the site. Higher electrical conductivity measurements were recorded in wells BH6, BH8 and BH9 positioned along the eastern boundary indicating greater influence from the Towradgi Arm and ocean located to the east of the site. Conversely, upgradient well BH7 indicated lower conductivity and relatively high redox potential, indicating likely recharge from the west of the site, consistent with data from the groundwater loggers.

6.3 SUBSURFACE GAS MONITORING

Subsurface gas monitoring results are summarised in Table 6.4, below. Detectable carbon dioxide concentrations were recorded in both wells, with 19.8% v/v detected in BH1. The detected CO_2 concentrations may be derived from organic matter or fill material (encountered to 0.4m in BH1).

Table 6.4 – Ground gas concentrations and flow conditions

Location	Date	Initial Methane (%v/v)	Stabilised Methane (%v/v)	Stabilised CO2 (%v/v)	Initial Flow (L/hr) ^	Borehole pressure (Pa)	Depth to Water* (mBTOC)
BH1	27 January 2022	0.0	0.0	19.8	0	0	1.49
BH2		0.0	0.0	0.1	0.1	0	0.48

* Water level following purging.
^ value used for worst case scenario for calculation of gas screening value (GSV).

The ground gas monitoring event was completed in the 27 January in conjunction with the groundwater monitoring event. Coffey has reviewed the climate data published by the Bureau of Meteorology for the Bellambi Automatic Weather Station approximately 7km north of Wollongong (Station Ref: 068228) and note that atmospheric pressure increased slightly over the two days prior to the sampling event from 1012hPa to 1016.7hPa. This suggests that the monitoring event is unlikely to be representative of actual worst case conditions.

6.3.1 Subsurface Gas – Preliminary Risk Assessment

A level 2 risk assessment was carried out which is a semi-quantitative approach based on site specific ground gas measurements. The Level 2 risk assessment is based on the method proposed by Wilson and Card (1999) and as outlined in Assessment and Management of Hazardous Ground Gases (NSW EPA 2020).

The first step in the process is to calculate a gas screening value (GSV) which is the product of maximum borehole flow rate (L/hr) and the maximum gas concentration (%). This is carried out for both methane and carbon dioxide with the worst-case value adopted. Where no gas flow rates are recorded, the instrument detection limit should be adopted (typically 0.1 L/hr).

The GSV calculated for the site was (19.8% x 0.1 L/hr) divided by 100 which equals 0.0198 L/hr.

Once a GSV value has been calculated, a characteristic gas situation (CS) is derived using Table 7 of the Hazardous Ground Gases Guidance (NSW EPA, 2020). For a GSV of 0.0141 L/hr a CS value of 1 is obtained, however this is increased to a CS value of 2 in accordance with the guidance (due to the presence of stabilised CO2 measurements greater than 5%). CS2 represents a low risk setting. While dissolved methane gas was not analysed in groundwater samples as part of this assessment, laboratory analysis reported volatile TRH concentrations below the LOR for all samples collected, indicating a low likelihood for hazardous gases being present in groundwater beneath the site.

The CS may need to be adjusted dependent on the presence of methane or CO2 in groundwater. Where hazardous ground gases are detected in water, the recommended course of action may include gas protection measures to be implemented.

6.4 LABORATORY ANALYTICAL RESULTS

6.4.1 Soil Analytical Results

Soil analytical results indicated the following:

- All samples recorded Per- and Polyfluoroalkyl Substances (PFAS), most organochlorine pesticides (OCP) and polychlorinated biphenyls (PCB) below the limit of reporting (LOR).
- One sample (BH4_0.1-0.2) recorded elevated lead concentrations (4,000mg/kg) exceeding Health Investigation Level (HIL) and Ecological Investigation Level (EIL) criteria. A deeper sample collected from the same borehole (BH4_0.9-1.0) recorded significantly lower lead concentration (18mg/kg), indicating that the lead impacts are likely limited to near-surface soil.
- Metals including arsenic, chromium, copper, lead, nickel and zinc were detected in the majority of samples collected across the site, albeit below assessment criteria.
- Low-level detectable concentrations of TRH were recorded in five samples (BH1_0.0-0.1m, BH5_0.1-0.2, BH10_0.1-0.2, CTP11_0.1-0.2 and DUP4), below the assessment criteria.
- One sample (CPT11_0.1-0.2) recorded detectable concentrations of BTEX compounds (0.6mg/kg total xylene), below the assessment criteria.
- One sample (BH5_0.1-0.2) recorded detectable OCP concentrations (endrin aldehyde and Methoxychlor), albeit below the assessment criteria
- One sample (BH1_0.1-0.2) recorded detectable concentrations of PAH (phenanthrene), below the assessment criteria

6.4.2 Acid Sulfate Soils

Two samples were tested for the presence of acid sulfate soils (ASS) based on field observations. One sample (BH10_1.5-1.95) comprising alluvial CLAY recorded net acidity (0.13% S and 79mol H+ / tonne) exceed which exceeds the thresholds set out within the Acid Sulfate Soils Assessment Guidelines (ASSMAC, 1998) for 1-1000 tonnes of soil disturbed (fine soil texture). The guidelines indicate a liming rate ranging from 0.5kg CaCO3 per tonne (50 tonnes disturbed – 0.2% sulfur) up to 93.6kg $CaCO_3$ per tonne (10,000 tonnes disturbed – 0.2% sulfur). Further guidance and recommended liming rates can be found in the guidelines.

6.4.3 Asbestos

Asbestos was not detected (below reporting limit of 0.01% w/w) in any soil samples analysed.

6.4.4 Groundwater Analytical Results

Groundwater analytical results indicated the following:

- All groundwater samples recorded PAH, BTEX and PFAS concentrations below the LOR
- All groundwater samples exceeded ANZG 95% marine DGV assessment criteria for copper.
- Groundwater samples collected from BH7 and BH10 exceeded ANZG 95% DGV assessment criteria for lead and zinc.
- Groundwater samples collected from BH9 (including duplicate sample DUP-1) exceeded ANZG 95% DGV assessment criteria for lead.
- Four samples (BH6, BH7, BH8 and DUP1) recorded detectable concentrations of TRH F3 (C16-C34), for which there are no applicable criteria.

7. DISCUSSION

7.1 CONCEPTUAL SITE MODEL

A conceptual side model (CSM) was developed based on the information reviewed and visual observations made during the site walkover. A CSM is a representation of site-related information regarding potential sources of contamination, receptors and exposure pathways.

Contamination, if not managed appropriately could pose a potential risk to human health or the environment. For an unacceptable risk to exist, there must be a plausible pollutant linkage between the source and a receptor by means of a transport mechanism (pathway).

7.2 POTENTIAL SOURCES OF CONTAMINATION

Based on the information reviewed and the observations made during the site walkover, Coffey has identified areas of environmental concern (AECs) and contaminants of potential concern (CoPCs) at the site as summarised in Table 7.1, below.

Table 7.1 – Summary of potential sources of contamination and investigation findings

AEC	Area of Environmental Concern (AEC)	Sub-component / description	Contaminants of Potential Concern (CoPC) (1)	Summary of investigation findings
1	Fill material of unknown origin	Construction fill imported to site during building construction, and landform modifications. Soil media potentially affected. Vapour and groundwater impact may also be possible depending on type and concentration of contaminants.	TRH, PAH, metals and asbestos	Intrusive investigations identified moderate filling in the central-southern portion and around the boundaries of the site (up to 1.0m bgl in BH6). Anthropogenic materials were observed in fill material in BH3, including brick and glass fragments, however were not observed in other portions of the site. Soil analytical results also indicated one exceedance of health and ecological assessment criteria in BH4 in the central-southern portion of the site, with elevated lead concentrations (4,000mg/kg) in sample BH4_0.1-0.2 exceeding HIL and EIL criteria. A deeper sample from BH4 indicated metals concentrations below the assessment criteria.
2	Hazardous materials used in former and existing site structures	Weathering / breakdown of hazardous building materials such as: Asbestos containing materials (ACM) and/or asbestos dust Lead paint and/or lead-containing dust.	Asbestos and lead	A Limited Asbestos and Hazardous Materials Pre-Demolition Survey undertaken by Coffey (reported separately) identified confirmed and suspected hazardous materials inside the existing buildings in the centre of the site (associated with the former Migrant's Hostel at the site), including confirmed bonded ACM and lead paint in the former kitchen and dining hall building and historical hut buildings. Lead-containing dust and asbestos dust were also identified in the larger former kitchen / dining hall building.

AEC	Area of Environmental Concern (AEC)	Sub-component / description	Contaminants of Potential Concern (CoPC) (1)	Summary of investigation findings
		Generally near surface soils are potentially affected.		Potential breakdown of hazardous materials into soils onsite may have occurred. Elevated lead concentrations in sample BH4 (discussed above) may be derived from lead-based paint or lea-containing dust. Asbestos was not observed or detected in samples of fill submitted for analysis however may be present in other portions of the site.
3	Storage and use of chemicals including pesticides, herbicides and insecticides at the site	Accumulation of pesticides, herbicides and insecticides during historical land use and during garden and building maintenance as part of McLeod House operations. Near-surface soil media potentially affected.	TRH, BTEX, PAHs, phenols, heavy metals, OCPs and OPPs.	Herbicides and pesticides may have accumulated in soil during garden maintenance. Trace detectable OCP concentration (0.096mg/kg) was reported sample BH5_0.1-0.2, including endrin aldehyde (0.07mg/kg) and Methoxychlor (0.82mg/kg) above the LOR (0.05mg/kg). Other OCP or OPP were not detected. The detectable concentration may be attributed to historical use of pesticides onsite, or may be attributed to historical filling. Small quantities of fuels, oils, pesticides, paints or other industrial cleaning products / solvents may have also been used or stored onsite at the groundskeeping yard during ongoing site use, which may have been released into soils via spills or leakages. However, no evidence of large-scale chemical storage or any current or former above or underground tanks was noted during fieldworks or in the site history review, and spills (if any) are expected to be minor/localised.
4	Offsite commercial / industrial activities	Runoff or groundwater flow from adjacent commercial and industrial properties to the west (including the former fuel depot) may represent an offsite source of contamination, based on proximity to the site. Soil media potentially affected. Vapour and groundwater impact may also be possible depending on type and	TRH, BTEX, PAH, PFAS, metals.	Historical records identified one historical record on the contaminated land public register for a former fuel depot approximately 250m to the south-west of the site. Land to the west also generally comprises commercial / light industrial properties, which may contribute to diffuse contamination sources of groundwater in the area. Surface runoff onto the site from offsite sources is expected to be limited by guttering installed along Squire's Way to the east, Elliotts Road to the north and Montague Street to the east, with overland flow expected to be predominantly captured by Cabbage Tree Creek or Towradgi Arm to the east. Potential contamination derived from historical commercial / industrial areas to the west may have leached into

AEC	Area of Environmental Concern (AEC)	Sub-component / description	Contaminants of Potential Concern (CoPC) (1)	Summary of investigation findings
		concentration of contaminants.		groundwater, which is expected to be upgradient or across gradient from the site. Groundwater analytical results indicated detectable concentrations of metals exceeding GILs, while low detectable concentrations of TRH (C_{10}-C_{16} and C_{16}-C_{34} fractions) were recorded in groundwater which may be derived from diffuse contaminant sources within the surrounding urban environment, or naturally occurring humic acids present within alluvial deposits which can be detected in samples submitted for TRH analysis. Groundwater consumptive use at the site is expected to be unlikely due to the urbanised setting of the site and brackish nature of groundwater.

7.3 EXPOSURE ASSESSMENT

7.3.1 Receptors

The following potential receptors were identified with consideration to the proposed site use:

- Construction workers during site development
- Future site users, including
  - Staff and athletes / visitors during ongoing CHPC operation
  - Maintenance workers
- Terrestrial ecological receptors onsite
- Aquatic ecological receptors offsite (including in Towradgi Arm / Cabbage Tree Creek and the Tasman Sea)

7.3.2 Transport mechanisms

Transport mechanisms for potential contaminants onsite include:

- Infiltration and vertical migration of soil leachates
- Lateral migration of groundwater and subsurface gases
- Surface water runoff from offsite sources to the north, and runoff onto offsite areas to the south

7.3.3 Exposure Pathways

The following potential exposure pathways for contaminants have been identified at the site

- Dermal/direct contact.

- Ingestion (incidental ingestion of soil).
- Inhalation via vapour intrusion.
- Inhalation of carbon dioxide (CO_2) or other gases derived from fill material.
- Inhalation of airborne dust particles.
- Direct contact with groundwater seepage during construction or ongoing site use.
- Plant uptake mechanisms

7.3.4 Tier 1 Risk Assessment

Soil analytical results generally reported contaminant concentrations below the relevant Tier 1 assessment criteria for a residential / open space land use, except for localised exceedances described in section 6.4.1. Groundwater exceeded some ecological assessment criteria as described in section 6.4.4. Laboratory results and site observations were considered as part of a Tier 1 Risk Assessment, which is summarised in Table 7.2, below.

Table 7.2 - Summary of potential receptors and exposure assessment

Receptor	Risk Assessment Summary
Human receptors – construction and intrusive maintenance workers (during construction and ongoing site operation)	Soil samples indicated all results were below the HSL-D intrusive / maintenance worker direct contact criteria, indicating a generally low health risk for direct contact, inhalation and incidental ingestion of organic CoPC in soil to intrusive maintenance workers. One near-surface sample (BH4_0.1-0.2) exceeded HIL-C and HIL-D criteria for lead, which could potentially pose unacceptable risk to future site users and construction workers, however this was an isolated exceedance and may represent an outlier in soils across the site. This location is also within the approximate footprint of the proposed CHPC building and associated carpark, and given the shallow depth and origin of the material (imported fill), this material is expected to be removed or covered during construction works. Workers may come into contact with groundwater indirectly during piling activities although contact is expected to be infrequent and of a short duration. Widespread intersection with groundwater across the site during construction is considered unlikely given its depth. It is expected that construction and intrusive maintenance workers will be working predominantly outdoors, with no basement levels or deep excavations / confined spaces planned. As such pollutant linkages associated with vapours and/or hazardous ground gases are assessed to be incomplete for construction workers or intrusive maintenance workers onsite.
Human receptors – ongoing site users and staff	**Vapour intrusion in indoor areas:** All soil and groundwater samples recorded TRH concentrations below HSL-D for vapour intrusion, indicating a low vapour intrusion risk to human receptors in indoor spaces.

Receptor	Risk Assessment Summary
	Direct contact / ingestion in outdoor areas: Near-surface sample BH4_0.1-0.2 exceeded HIL-C and HIL-D criteria for lead, which could potentially pose unacceptable risk to future site users and construction workers, however this was an isolated exceedance and represents an outlier in soils across the site. It is also expected to be removed or covered during construction works. While ACM was not identified during fieldworks or in any of the samples analysed at the laboratory, ACM may be present at the site in fill material, or in near-surface soils derived from the placement and subsequent removal or demolition of the former huts onsite. As such, unexpected finds or potential health exceedances may be possible in fill material across the site. Fill containing asbestos poses a potential health risks where this material remains exposed at surface following site development. **Hazardous ground gases** Detectable concentrations of carbon dioxide were recorded in subsurface gas wells onsite, with level 2 LFG risk assessment indicating a low risk of hazardous ground gases being present onsite. Fill material was also generally limited to building and demolition waste, with volatile TRH concentrations in soil recorded below the LOR at the gas well locations. As such, the exposure risk of hazardous ground gases at the site is considered to be low based on the current dataset. It is recommended that follow up monitoring is completed over a range of atmospheric conditions to confirm the gas characteristic situation.
Terrestrial ecological receptors (onsite)	Near-surface sample BH4_0.1-0.2 exceeded EIL criteria for lead, which could potentially pose unacceptable risk to ecological receptors, however this was an isolated exceedance and represents an outlier in soils across the site. It is also expected to be removed or covered during construction works, limiting exposure to ecological receptors at the site. Other samples recorded CoPC concentrations below the ESL and EIL criteria indicating a generally low risk to terrestrial ecological receptors at the site.
Aquatic ecological receptors (Cabbage Tree Creek, Towradgi Arm and Tasman Sea)	Groundwater results exceeded GILs for metals (cadmium, copper, nickel and zinc) broadly across the site. Similar concentrations were reported in in upgradient wells compared to downgradient wells, suggesting fill present within the site does not appear to have resulted in significant deterioration of groundwater quality and hence, is unlikely to represent the primary source of impact. Towradgi Arm – approximately 180m to the east of the site) and small tributary streams, the closest being 70m to the east of the site. Cabbage Tree Creek is also situated approximately 150m to the west of the south The nearest confirmed receptor sites for groundwater include Towradgi Arm and its tributaries (70-180m east of the site), Cabbage Tree Creek (150m to the west) and the Tasman Sea. Attenuation of contaminants in

Receptor	Risk Assessment Summary
	groundwater is expected to occur over this distance through mechanisms of adsorption, dispersion and dilution which reduces impacts to ecological receptors within these water bodies.

8. CONCLUSIONS AND RECOMMENDATIONS

Based a review of available data, observations made during fieldwork and an assessment of laboratory analytical data in consideration of the proposed land use, Coffey concludes that:

- The site has been historically occupied by the Balgownie Migrant Worker's Hostel from the early-1950's to the mid-1970's, which comprised up to 182 Nissen and Quonset Huts (army-style buildings with rounded corrugated iron roofing, and weatherboard construction), with a shared communal Kitchen/Dining Hall and associated Laundry facilities present in the centre of the site. The shared communal kitchen / dining hall building remains and is occupied by a childcare facility. Two of the huts have been restored and are adjacent to the west of the kitchen / dining hall building. The site was subsequently used as open space / playing fields until the establishment of the University Innovation Campus sometime around 2006.
- A recent HAZMAT survey of these structures identified bonded ACM and lead paint in the former kitchen and dining hall building and historical hut buildings. Lead-containing dust and asbestos dust were also identified in the larger former kitchen / dining hall building.
- Subsurface conditions across the site comprised variable thicknesses of topsoil / fill material in various boreholes, underlain by alluvial clay /sand, residual sandy clay and weathered sedimentary rock (sandstone and siltstone) to the limit of the investigation.
- Groundwater was encountered to depths ranging between 0.3m up to 5.5m bgl, with groundwater logger data collected over a 3-week period indicating that groundwater predominantly flows towards the east and south-east. Standing water levels do not appear to be significantly influenced by tidal movements
- Analysis of soil samples collected from 28 sampling positions spread across the site has not identified widespread soil contamination. With the exception of one near-surface sample collected from borehole BH4 (0.1-0.2mbgl) which reported lead concentrations exceeding the health/ecological criteria, other samples reported COPC generally below the LOR and consistently below the soil assessment criteria. Available data shows the lead-impacted soil does not extend significantly in a vertical direction at location BH4. The source of lead is suspected to derive from fill material and/or from the historical use and breakdown of lead paint on former structures at the site.
- Groundwater samples recorded concentrations of copper, lead and zinc exceeding the adopted assessment however given that similar concentrations were reported in in upgradient wells compared to downgradient wells, suggesting fill present within the site does not appear to have resulted in significant deterioration of groundwater quality and these metals derive from diffuse sources within the surrounding urban environment.
- Acid sulfate soil testing indicates that the alluvial subsurface soils may be acid-forming at depth, with one sample (BH10_1.5-1.95) exceeding the action criteria stipulated in the *Acid Sulfate Soil Manual*.
- One round of ground gas monitoring recorded elevated concentrations of carbon dioxide in BH1. Methane was not detected. The available data collected from this investigation infers ground

gases pose a low risk although Coffey notes this monitoring event was not reflective of conditions that promote positive gas flow. Ground gases were assessed to comprise Characteristic Situation 2 (CS2), which according to the recommendations outlined within the Hazardous Ground Gas Guidelines (NSW EPA, 2020), triggers the need for measures to be incorporated into the proposed structure to restrict gas ingress

Based on the above, Coffey concludes that the site can be made suitable for the proposed development as per the requirements of *State Environmental Planning Policy No. 55 – Remediation of Land*. Coffey recommends the following actions to manage potential issues around subsurface contamination at the site:

- Complete additional ground gas monitoring events over a range of atmospheric conditions to refine the assessment of potential risks and need for gas protection measures to be incorporated within the proposed structure.
- An Acid Sulfate Soil Management Plan (ASSMP) should be prepared to reduce potential for unacceptable environmental impacts associated with the disturbance of ASS within and surrounding the area of the proposed works. The ASSMP should be prepared by a suitably experienced consultant in general accordance with the Acid Sulfate Soil Manual, published by the Acid Sulfate Soils Management Advisory Committee (ASSMAC).
- An unexpected finds plan should be prepared as part of the construction management process to account for any non-specific and specific unexpected finds including asbestos. Non-specific unexpected finds refer to any possible occurrence within any area of the site not investigated. Specific unexpected finds refer to areas of the site where, for example, contamination was identified yet the source or the extent was not confirmed.

In addition to the above, and prior to the commencement of earthworks and site redevelopment activities, it is recommended that a Construction Environmental Management Plan (CEMP) is prepared by the principal contractor to manage environmental risk posed to construction workers, neighbouring site users and to the surrounding environment.

This report should be read in conjunction with the attached “Important information about your Tetra Tech Coffey Environmental Report”.

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APPENDIX A: LIMITATIONS

IMPORTANT INFORMATION ABOUT YOUR TETRA TECH COFFEY ENVIRONMENTAL REPORT

Introduction

This report has been prepared by Tetra Tech Coffey for you, as Tetra Tech Coffey's client, in accordance with our agreed purpose, scope, schedule and budget.

The report has been prepared using accepted procedures and practices of the consulting profession at the time it was prepared, and the opinions, recommendations and conclusions set out in the report are made in accordance with generally accepted principles and practices of that profession.

The report is based on information gained from environmental conditions (including assessment of some or all of soil, groundwater, vapour and surface water) and supplemented by reported data of the local area and professional experience. Assessment has been scoped with consideration to industry standards, regulations, guidelines and your specific requirements, including budget and timing. The characterisation of site conditions is an interpretation of information collected during assessment, in accordance with industry practice.

This interpretation is not a complete description of all material on or in the vicinity of the site, due to the inherent variation in spatial and temporal patterns of contaminant presence and impact in the natural environment. Tetra Tech Coffey may have also relied on data and other information provided by you and other qualified individuals in preparing this report. Tetra Tech Coffey has not verified the accuracy or completeness of such data or information except as otherwise stated in the report. For these reasons the report must be regarded as interpretative, in accordance with industry standards and practice, rather than being a definitive record.

Your report has been written for a specific purpose

Your report has been developed for a specific purpose as agreed by us and applies only to the site or area investigated. Unless otherwise stated in the report, this report cannot be applied to an adjacent site or area, nor can it be used when the nature of the specific purpose changes from that which we agreed.

For each purpose, a tailored approach to the assessment of potential soil and groundwater contamination is required. In most cases, a key objective is to identify, and if possible quantify, risks that both recognised and potential contamination pose in the context of the agreed purpose. Such risks may be financial (for example, clean up costs or constraints on site use) and/or physical (for example, potential health risks to users of the site or the general public).

Limitations of the Report

The work was conducted, and the report has been prepared, in response to an agreed purpose and scope, within time and budgetary constraints, and in reliance on certain data and information made available to Tetra Tech Coffey.

The analyses, evaluations, opinions and conclusions presented in this report are based on that purpose and scope, requirements, data or information, and they could change if such requirements or data are inaccurate or incomplete.

This report is valid as of the date of preparation. The condition of the site (including subsurface conditions) and extent or nature of contamination or other environmental hazards can change over time, as a result of either natural processes or human influence. Tetra Tech Coffey should be kept appraised of any such events and should be consulted for further investigations if any changes are noted, particularly during construction activities where excavations often reveal subsurface conditions.

In addition, advancements in professional practice regarding contaminated land and changes in applicable statues and/or guidelines may affect the validity of this report. Consequently, the currency of conclusions and recommendations in this report should be verified if you propose to use this report more than 6 months after its date of issue.

The report does not include the evaluation or assessment of potential geotechnical engineering constraints of the site.

Interpretation of factual data

Environmental site assessments identify actual conditions only at those points where samples are taken and on the date collected. Data derived from indirect field measurements, and sometimes other reports on the site, are interpreted by geologists, engineers or scientists to provide an opinion about overall site conditions, their likely impact with respect to the report purpose and recommended actions.

Variations in soil and groundwater conditions may occur between test or sample locations and actual conditions may differ from those inferred to exist. No environmental assessment program, no matter how comprehensive, can reveal all subsurface details and anomalies. Similarly, no professional, no matter how well qualified, can reveal what is hidden by earth, rock or changed through time.

The actual interface between different materials may be far more gradual or abrupt than assumed based on the facts obtained. Nothing can be done to change the actual site conditions which exist, but steps can be taken to reduce the impact of unexpected conditions.

For this reason, parties involved with land acquisition, management and/or redevelopment should retain the services of a suitably qualified and experienced environmental consultant through the development and use of the site to identify variances, conduct additional tests if required, and recommend solutions to unexpected conditions or other unrecognised features encountered on site. Tetra Tech Coffey would be pleased to assist with any investigation or advice in such circumstances.

Recommendations in this report

This report assumes, in accordance with industry practice, that the site conditions recognised through discrete sampling are representative of actual conditions throughout the investigation area. Recommendations are based on the resulting interpretation.

Should further data be obtained that differs from the data on which the report recommendations are based (such as through excavation or other additional assessment), then the recommendations would need to be reviewed and may need to be revised.

Report for benefit of client

Unless otherwise agreed between us, the report has been prepared for your benefit and no other party. Other parties should not rely upon the report or the accuracy or completeness of any recommendation and should make their own enquiries and obtain independent advice in relation to such matters.

Tetra Tech Coffey assumes no responsibility and will not be liable to any other person or organisation for, or in relation to, any matter dealt with or conclusions expressed in the report, or for any loss or damage suffered by any other person or organisation arising from matters dealt with or conclusions expressed in the report.

To avoid misuse of the information presented in your report, we recommend that Tetra Tech Coffey be consulted before the report is provided to another party who may not be familiar with the background and the purpose of the report. In particular, an environmental disclosure report for a property vendor may not be suitable for satisfying the needs of that property's purchaser. This report should not be applied for any purpose other than that stated in the report.

Interpretation by other professionals

Costly problems can occur when other professionals develop their plans based on misinterpretations of a report. To help avoid misinterpretations, a suitably qualified and experienced environmental consultant should be retained to explain the implications of the report to other professionals referring to the report and then review plans and specifications produced to see how other professionals have incorporated the report findings.

Given Tetra Tech Coffey prepared the report and has familiarity with the site, Tetra Tech Coffey is well placed to provide such assistance. If another party is engaged to interpret the recommendations of the report, there is a risk that the contents of the report may be misinterpreted and Tetra Tech Coffey disowns any responsibility for such misinterpretation.

Data should not be separated from the report

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way. Logs, figures, laboratory data, drawings, etc. are customarily included in our reports and are developed by scientists or engineers based on their interpretation of field logs, field testing and laboratory evaluation of samples. This information should not under any circumstances be redrawn for inclusion in other documents or separated from the report in any way.

This report should be reproduced in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties.

Responsibility

Environmental reporting relies on interpretation of factual information using professional judgement and opinion and has a level of uncertainty attached to it, which is much less exact than other design disciplines. This has often resulted in claims being lodged against consultants, which are unfounded. As noted earlier, the recommendations and findings set out in this report should only be regarded as interpretive and should not be taken as accurate and complete information about all environmental media at all depths and locations across the site.

APPENDIX B: FIGURES

LEGEND

- Geotechnical borehole location
- Environmental borehole location
- CPT and environmental hand auger location
- Watercourse
- Lot boundary
- Site boundary

SOURCE
Sample locations and site boundary from Tetra Tech Coffey.
Watercourses and cadastre from DFSI.
Aerial imagery from Nearmap (capture date 01-11-2021).

N

0 40 80 m

SCALE 1:2,000
PAGE SIZE: A3
PROJECTION: GDA2020 MGA Zone 56

NS PROJECTS PTY LTD

ST GEORGE ILLAWARRA DRAGONS
COMMUNITY AND HIGH PERFORMANCE CENTRE

FIGURE 1

Proposed Investigation Location Plan

TETRA TECH COFFEY

DATE: 15.02.22 PROJECT: 754-SYDEN295047 FILE: 295047_01_F001_GIS_REVA

APPENDIX C: SELECTED SITE PHOTOGRAPHS

APPENDIX C – SELECTED SITE PHOTOGRAPHS

Photo 1 – View of open space and the childcare facility in the centre of the site

Photo 2 – View of open space and asphalt-sealed carpark in the southern portion of the site

Photo 3 – View of open space / playing fields in the north-west corner of the site.

Photo 4 – View of the childcare facility building with adjoining carpark.

APPENDIX D: HISTORICAL AERIAL PHOTOGRAPHS

1951

1961

1970

1974

1990

2005

APPENDIX E: BOREHOLE LOGS

SOIL DESCRIPTION EXPLANATION SHEET

DEFINITION:

In engineering terms soil includes every type of uncemented or partially cemented inorganic or organic material found in the ground. In practice, if the material can be remoulded or disaggregated by hand in its field condition or in water it is described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL & SOIL NAME

Soils are described in accordance with AS 1726:2017 as shown in the table on Sheet 2.

PARTICLE SIZE DEFINITIONS

Components	Subdivision	Size (mm)
Boulders Cobbles		>200 63 - 200
Gravel	Coarse Medium Fine	19 - 63 6.7 - 19 2.36 - 6.7
Sand	Coarse Medium Fine	0.6 - 2.36 0.210 - 0.6 0.075 - 0.21
Silt Clay		0.002 – 0.075 < 0.002

MOISTURE CONDITION

Coarse Grained Soil

Dry (D)	Non-cohesive and free-running
Moist (M)	Soil feels cool, darked in colour. Soil tends to stick together.
Wet (W)	As for moist, with free water forming when handled.

Fine Grained Soil

Moist, dry of plastic limit ($w<W_P$)	Hard and friable or powdery
Moist, near plastic limit ($w\approx W_P$)	Can be moulded at a moisture content approximately equal to the plastic limit.
Moist, wet of plastic limit ($w>W_P$)	Soils usually weakened and free water forms on hands when handling.
Wet, near liquid limit ($w\approx W_L$)	Near liquid limit.
Wet, wet of liquid limit ($w>W_L$)	Wet of liquid limit.

CONSISTENCY OF COHESIVE SOILS

Term (Abbreviation)	Indicative undrained shear strength s_u (kPa)	Field guide
Very Soft (VS)	<12	Soil exudes between fingers when squeezed in hand.
Soft (S)	12 – 25	Soil can be moulded by light finger pressure.
Firm (F)	25 – 50	Soil can be moulded by strong finger pressure.
Stiff (St)	50 – 100	Soil cannot be moulded by fingers.
Very Stiff (VSt)	100 – 200	Soil can be indented by thumb nail.
Hard (H)	>200	Soil can be indented with difficulty by thumb nail.
Friable (Fb)	–	Soil can be easily crumbled or broken into small pieces by hand.

RELATIVE DENSITY OF NON-COHESIVE SOILS

Term (Abbreviation)	Density index (%)
Very Loose (VL)	Less than 15
Loose (L)	15 – 35
Medium Dense (MD)	35 – 65
Dense (D)	65 – 85
Very Dense (VD)	Greater than 85

MINOR COMPONENTS

Term	Assessment Guide	Proportion of minor component in:
Trace	Presence just detectable by feel or eye, but soil properties little or no different to general properties of primary component.	Coarse grained soils: Fines - <5%, Accessory coarse fraction - <15% Fine grained soils: sand/gravel <15%
With	Presence easily detected by feel or eye, soil properties little different to general properties of primary component.	Coarse grained soils: Fines - 5 to 12%, Accessory coarse fraction – 15 to 30% Fine grained soils: sand/gravel 15 to 30%

SOIL STRUCTURE AND CEMENTATION

Zoning		Cementation	
Layer	Zone is continuous across exposure or sample.	Weakly cemented	Easily disaggregated by hand in air or water.
Lense	Discontinuous layer of different material, with lenticular shape.	Moderately cemented	Effort is required to disaggregate the soil by hand in air or water.
Pocket	Irregular inclusion of different material.		

GEOLOGICAL ORIGIN

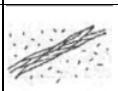
Residual soil	Structure and fabric of parent rock not visible.
Extremely weathered material	Structure and/or fabric of parent rock is visible.
Alluvial soil	Deposited by streams and rivers.
Estuarine soil	Deposited in coastal estuaries, including sediments carried by inflowing rivers and streams, or tidal currents.
Marine soil	Deposited in a marine environment
Lacustrine soil	Deposited in freshwater lakes
Aeolian soil	Carried and deposited by wind
Colluvial soil	Deposited on slopes (transported downslope by gravity, with or without assistance of water).
Topsoil	Mantle of surface or near surface material, often defined by high levels of organic material.
Fill	Any material which has been placed by anthropogenic processes. Fill may be significantly more variable between tested locations than naturally occurring soils.

SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 63 mm and basing fractions on estimated mass)							GROUP SYMBOL	SOIL NAME
COARSE GRAINED SOIL More than 65% of materials less than 63 mm is larger than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to the naked eye)	GRAVEL More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVEL (Fines less than 5%)	Wide range in grain size and substantial amounts of all intermediate particle sizes, not enough fines to bind coarse grains, no dry strength.			GW	GRAVEL
				Predominantly one size or a range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength.			GP	GRAVEL
			GRAVEL with FINES (Fines greater than 12%)	'Dirty' materials with excess of non-plastic fines (for identification procedures see ML below).			GM	Silty GRAVEL
				'Dirty' materials with excess of plastic fines (for identification procedures see CL below).			GC	Clayey GRAVEL
		SAND More than half of coarse fraction is smaller than 2.36	CLEAN SAND (Fines less than 5%)	Wide range in grain sizes and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength.			SW	SAND
				Predominantly one size or a range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength.			SP	SAND
			SAND with FINES (Fines greater than 12%r)	'Dirty' materials with excess of non-plastic fines (for identification procedures see ML below).			SM	Silty SAND
				'Dirty' materials with excess of plastic fines (for identification procedures see CL below).			SC	Clayey SAND
FINE GRAINED SOIL More than 35% of material less than 63 mm is smaller than 0.075 mm			IDENTIFICATION PROCEDURES ON FRACTIONS <0.2 mm					
		SILT & CLAY Liquid limit less	DRY STRENGTH	DILATANCY	TOUGHNESS			
			None to low	Slow to rapid	Low		ML	SILT
			Medium to high	None to slow	Medium		CL, CI	CLAY
			Low to medium	Slow	Low		OL	Organic SILT
		SILT & CLAY Liquid limit	Low to medium	None to slow	Low to medium		MH	SILT
			High to very high	None	High		CH	CLAY
			Medium to high	None to very slow	Low to medium		OH	Organic CLAY
HIGHLY ORGANIC SOILS			Readily identified by colour, odour, spongy feel and frequently by fibrous texture.				PT	Peat

● Low plasticity – Liquid Limit W_L less than 35%. ● Medium plasticity –W_L between 35% and 50%. ● High plasticity – W_L greater than 50%.

COMMON DEFECTS IN SOIL

TERM	DEFINITION	DIAGRAM
Parting	A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (e g. bedding). May be open or closed.	
Fissure	A surface or crack across which the soil has little or no tensile strength but which is not parallel or sub parallel to layering. May be open or closed. May include desiccation cracks.	
Sheared Seam	Zone in clayey soil with roughly parallel near planar, curved or undulating boundaries containing closely spaced, smooth or slickensided, curved intersecting joints which divide the mass into lenticular or wedge shaped blocks.	
Sheared Surface	A near planar curved or undulating, smooth, polished or slickensided surface in clayey soil. The polished or slickensided surface indicates that movement (in many cases very little) has occurred along the defect	

TERM	DEFINITION	DIAGRAM
Softened Zone	A zone in clayey soil, usually adjacent to a defect in which the soil has a higher moisture content than elsewhere	
Tube	Tubular cavity. May occur singly or as one of a large number of separate or interconnected tubes. Walls often coated with clay or strengthened by denser packing of grains. May contain organic matter. Origins include root holes, animal burrows, tunnel erosion.	
Tube cast	An infilled tube. The infill may be uncemented or weakly cemented soil or have rock properties.	
Infilled Seam	Sheet or wall like body of soil substance or mass with roughly planar to irregular near parallel boundaries which cuts through a soil mass. Formed by infilling of open defects.	

ROCK DESCRIPTION EXPLANATION SHEET

The descriptive terms used by Tetra Tech Coffey are given below. They are broadly consistent with Australian Standard AS1726:2017.

DEFINITIONS: Rock material, defect, structure and rock mass are defined as follows:

Rock material	In engineering terms rock material is any naturally occurring aggregate of minerals and/or organic materials that cannot be disaggregated by hand in air or water without prior soaking. Rock material is intact rock that is bounded by defects. Material which can be disaggregated or remoulded should be described as a soil.
Defect	Discontinuity, fracture, break or void in the material or materials across which there is little or no tensile strength.
Structure	Nature and configuration of the different defects within the rock mass and their relationship with each other.
Rock mass	It is the entirety of the system formed by all of the rock material and all of the defects. That is, it is a body of material which is not effectively homogeneous.

MATERIAL DESCRIPTIVE TERMS:

Rock name	Simple rock names are used rather than precise geological classification.
Particle size	Grain size terms for sandstone are:
Coarse grained	Mainly 0.6mm to 2mm
Medium grained	Mainly 0.2mm to 0.6mm
Fine grained	Mainly 0.06mm (just visible) to 0.2mm
Fabric	When grains show an alignment, a preferred orientation or a layering (e.g. bedding or lamination for sedimentary rocks, and foliation or cleavage for metamorphic rocks) the terms used are:
Massive	No layering or penetrative fabric.
Indistinct	Layering or fabric just visible. Little effect on strength properties.
Distinct	Layering or fabric is easily visible. Rock may break more easily parallel to the fabric.

CLASSIFICATION OF MATERIAL WEATHERING

Term	Abbreviation	Definition
Residual Soil	**RS**	Material is weathered to such an extent that it has soil properties. Mass structure and material texture and fabric of original rock are no longer visible. Soil has not been significantly transported.
Extremely Weathered	**XW**	Material is weathered to such an extent that it has soil properties, i.e. it either disaggregates or can be remoulded in water. Mass structure and material texture and fabric of original rock are still visible.
Highly Weathered[1]	**HW**	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is not recognisable. Rock strength is significantly changed by weathering. Some primary minerals have weathered to clay minerals. Porosity may be increased by leaching or may be decreased due to the deposition of weathering products in pores.
Moderately Weathered[1]	**MW**	The whole of the rock material is discoloured, usually by iron staining or bleaching to the extent that the colour of the original rock is no longer recognisable. Little or no change of strength from fresh rock.
Slightly Weathered	**SW**	Rock is partially discoloured with staining or bleaching adjacent to defects, but shows little or no change of strength from fresh rock.
Fresh	**FR**	Rock shows no sign of decomposition of individual minerals or colour changes.

Notes on Weathering:

1. The term 'Distinctly Weathered' (DW) may be used where it is not practicable (or it is judged that there is no advantage in making such a distinction) to distinguish between 'Highly Weathered' and 'Moderately Weathered'. 'Distinctly Weathered' is defined as follows: 'Rock strength usually changed by weathering. The rock may be highly discoloured, usually by iron staining. Porosity may be increased by leaching, or may be decreased due to deposition of weathering products in pores'.
2. Where physical and chemical changes of the rock material are caused by hot gases or liquids at depth (process called alteration) the term 'altered' may be substituted for 'weathering' to give the abbreviations XA, HA, MA, SA and DA.

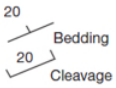
ROCK MATERIAL STRENGTH TERMS

Term (Abbreviation)	Guide to Strength: Point Load Strength Index, $I_{s(50)}$ (MPa)	Guide to Strength: Field Assessment
Very Low (VL)	0.03 - 0.1	Material crumbles under firm blows with sharp end of pick; can be peeled with a knife; too hard to cut a triaxial sample by hand; pieces up to 30mm thick can be broken by finger pressure.
Low (L)	0.1 - 0.3	Easily scored with a knife; indentations 1mm to 3mm show with firm bows of a pick point; has a dull sound under hammer. A piece of core 150mm long by 50mm diameter may be broken by hand. Sharp edges of core may be friable and break during handling.
Medium (M)	0.3 to 1.0	Readily scored with a knife; a piece of core 150mm long by 50mm diameter can be broken by hand with difficulty.
High (H)	1 to 3	A piece of core 150mm long by 50mm diameter cannot be broken by hand but can be broken by a pick with a single firm blow; rock rings under hammer.
Very High (VH)	3 to 10	Hand specimen breaks after more than one blow; rock rings under hammer.
Extremely High (EH)	More than 10	Specimen requires many blows with geological pick to break through intact material; rock rings under hammer.

Notes on Rock Material Strength:

1. Material with strength less than 'Very Low' should be described using soil characteristics.
2. The method of measuring the $I_{S(50)}$ should be in accordance with AS 4133.4.2.
3. The rock strength should be determined perpendicular to any anisotropy in the rock. High strength anisotropic rocks may readily break parallel to the planar anisotropy.
4. Although AS1726:2017 provides a basis for rock strength terms based on Unconfined Compressive Strength (UCS), the ratio between UCS and $I_{S(50)}$ may vary from less than 10 to over 30 depending on the rock type and overall strength. The UCS/$I_{S(50)}$ strength ratio should be determined for each rock material.
5. The rock strength classification using $I_{S(50)}$ above should be considered indicative only. The rock strength classified in accordance with AS1726:2017 may be higher or lower if UCS results are available.

COMMON ROCK DEFECT TYPES

Term	Definition	Diagram	Map Symbol	Graphic Log (Note 1)
Parting	A surface or crack across which the rock has little or no tensile strength. Parallel or sub-parallel to layering (e.g. bedding) or a planar anisotropy in the rock material (e.g. cleavage). May be open or closed.			
Joint	A surface or crack with no apparent shear displacement and across which the rock has little or no tensile strength, but which is not parallel or sub-parallel to layering or to planar anisotropy in the rock material. May be open or closed.			
Sheared Zone/Seam (Note 3)	Zone of rock material with roughly parallel near planar, curved or undulating boundaries cut by closely spaced joints, sheared surfaces or other defects. Some of the defects are usually curved and intersect to divide the mass into lenticular or wedge shaped blocks.			
Sheared Surface (Note 3)	A near planar, curved or undulating surface which is usually smooth, polished or slickensided and which shows evidence of shear displacement.			
Crushed Seam (Note 3)	Seam of soil material with roughly parallel almost planar boundaries, composed of disoriented, usually angular fragments of the host rock material which may be more weathered than the host rock. The seam has soil properties.			
Infilled Seam	Seam of soil material usually with distinct roughly parallel boundaries formed by the migration of soil into an open cavity or joint, infilled seams up to 1mm thick may be described as veneer or coating on a joint surface.			
Extremely Weathered Seam	Seam of soil material, often with gradational boundaries. Formed by weathering of the rock material in place.			

Notes on Defects:

1. Usually borehole logs show the true dip of defects, and face sketches and sections show the apparent dip.
2. Partings and joints are not usually shown on the graphic log unless considered significant.
3. Sheared zones/seams, sheared surfaces and crushed seams are generally faults in geological terms.

DEFECT SHAPE TERMS

Planar	The defect does not vary in orientation
Curved	The defect has a gradual change in orientation
Undulating	The defect has a wavy surface
Stepped	The defect has one or more well defined steps
Irregular	The defect has many sharp changes of orientation

Note: The assessment of defect shape is partly influenced by the scale of the observation.

DEFECT ROUGHNESS TERMS

Very Rough	Many large surface irregularities (amplitude generally more than 1mm). Feels like, or coarser than very coarse sand paper.
Rough	Many small surface irregularities (amplitude generally less than 1mm). Feels like fine to coarse sand paper.
Smooth	Smooth to touch. Few or no surface irregularities.
Polished	Shiny smooth surface.
Slickensided	Grooved or striated surface, usually polished.

DEFECT COATING TERMS

Clean	No visible coating.
Stained	No visible coating but surfaces are discoloured.
Veneer	A visible coating of soil or mineral, too thin to measure; may be patchy.
Coating	A visible coating up to 1mm thick. Thicker soil material should be described using appropriate defect terms (e g. infilled seam). Thicker rock strength material should be described as a vein.

DIMENSION OF DEFECTS

Spacing, length, openness and thickness

The spacing, length, aperture (openness), and seam thickness should generally be described directly in millimetres or metres.

Block Shape

Where it is considered significant, block shape (e.g. tabular, prismatic, columnar) should be described using the terms in Table 23 of AS 1726:2017.

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	***BH01***
sheet:	1 of 4
project no.	***754-SYDGE295047***
client:	***NS Projects Pty Ltd***
date started:	***07 Dec 2021***
principal:	
date completed:	***07 Dec 2021***
project:	***St George Illawarra Dragons' Facility***
logged by:	***CP***
location:	***7-9 Squires Way, Fairy Meadows***
checked by:	***AJB***

position: E: 306917; N: 6191717 (MGA94) | surface elevation: 3.18 m (AHD) | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N			E	3				**FILL: Gravelly SAND**: fine to medium grained, dark brown, fine to medium grained angular to sub-angular gravel, trace cement fragments.	D			**FILL**
			E				CH	**CLAY**: low to medium plasticity, brown, mottled black, trace fine to medium grained gravel.	<Wp	St		**ALLUVIAL** PID: 1.3 ppm
			E	2	1.0			becoming dark brown, gravel content decreasing				PID: 0.9 ppm
			E SPT 3, 5, 7 N*=12	1	2.0			becoming red, mottled grey	>Wp			HP 90 kPa PID: 0.7 ppm HP 110 kPa HP 110 kPa PID: 0.9 ppm
			E SPT 3, 4, 6 N*=10	0	3.0			becoming dark brown				PID: 3.1 ppm HP 110 kPa HP 110 kPa HP 115 kPa
			SPT 3, 4, 5 N*=9	-1	4.0							
				-2	5.0							
			SPT 4, 10, 7 N*=17	-3	6.0		CI	**Sandy CLAY**: medium to high plasticity, pale grey, fine to medium grained sand.		VSt		PID: 6.8 ppm HP 250 kPa HP 250 kPa HP 230 kPa
				-4	7.0							
			SPT 4, 6, 9 N*=15				CI	**CLAY**: medium to high plasticity, red, mottled grey, trace gravel.		St		HP 250 kPa HP 250 kPa iron staining

CDF_0_10_00.3_LIBRARY.GLB rev:CDF_0_10_00.3 2020-08-25 Log COF BOREHOLE: NON CORED 754-SYDGE295047 CORED HOLES.GPJ <<DrawingFile>> 28/01/2022 09:57

method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH01**
sheet:	2 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**07 Dec 2021**
principal:	
date completed:	**07 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: E: 306917; N: 6191717 (MGA94) | surface elevation: 3.18 m (AHD) | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD				-5			CI	**CLAY**: medium to high plasticity, red, mottled grey, trace gravel. *(continued)*	>Wp	St		HP 270 kPa PID: 6.2 ppm **ALLUVIAL**
			SPT 5, 7, 17 N*=24	-6	9.0		SC	**CLAYEY SAND**: fine to medium grained, dark brown, mottled grey, low to medium plasticity clay.	W	VSt		PID: 7.5 ppm HP 180 kPa HP 220 kPa HP 240 kPa
N				-7	10.0							
				-8	11.0							
W			SPT 6, 9, 26 N*=35	-9	12.0		CI	**Sandy CLAY**: medium to high plasticity, pale brown, mottled grey, fine to medium grained sand.	>Wp	VSt		PID: 3.4 ppm HP 80 kPa HP 110 kPa HP 210 kPa
				-10	13.0							
			SPT 31, 0, 0 N*=0	-11	14.0							
				-12	15.0			Borehole BH01 continued as cored hole				

CDF_0_10_00.3_LIBRARY.GLB rev:CDF_0_10_00.3 2020-08-25 Log COF BOREHOLE: NON CORED 754-SYDGE295047 CORED HOLES.GPJ <<DrawingFile>> 28/01/2022 09:57

method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH01**
sheet:	3 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**07 Dec 2021**
principal:	
date completed:	**07 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: E: 306917; N: 6191717 (MGA94) | surface elevation: 3.18 m (AHD) | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information				material substance						rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular	general
		-5										
			9.0									
		-6										
			10.0									
		-7										
			11.0									
		-8										
			12.0									
		-9										
			13.0									
		-10										
			14.0									
		-11			started coring at 14.50m							
HQ		-12	15.0		**Sandy CLAY (CL)**: low plasticity, dark brown, fine to medium grained sand, trace fine to medium grained gravel.	XW MW			88%		PT, 2°, PL, RO, VN - Clay	
					SANDSTONE: fine to medium grained, pale grey, distinctly laminated with dark grey shale 0-5°.							
					SILTSTONE: pale grey, distinctly laminated with dark grey shale 0-5°.	SW					PT, 4°, PL, RO, CO - Clay, 1 mm PT, 3°, PL, RO, CO - Clay, 1 mm JT, 55°, CU, healed	

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH01**
sheet:	4 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**07 Dec 2021**
principal:	
date completed:	**07 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: E: 306917; N: 6191717 (MGA94) | surface elevation: 3.18 m (AHD) | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information				material substance					rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ		-13			**SILTSTONE**: pale grey, distinctly laminated with dark grey shale 0-5°. *(continued)* becoming dark grey, with banding 0-5°	SW			88%		PT, 3°, PL, RO, CN SM, 3°, PL, Clay, 2 mm PT, 3°, PL, RO, CN JT, 80°, CU, healed JT, 75°, CU, healed
		-14	17.0		becoming pale grey, distinctly bedded 5-10°						JT, 70°, CU, healed JT, 70°, CU, healed JT, 70°, CU, healed JT, 70°, CU, healed JT, 70°, CU, healed JT, 70°, CU, healed PT, 2°, PL, RO, CN PT, 5°, PL, RO, CN CS, PL, 60 mm PT, 4°, PL, RO, CN CS, PL, 100 mm SM, 5°, PL, Clay, 2 mm
		-15	18.0		becoming dark grey, indistinctly bedded	FR			68%		PT, 4°, PL, RO, CN PT, 2°, PL, RO, CN PT, 2°, PL, RO, CN PT, 3°, PL, RO, CN PT, 12°, PL, RO, CN PT, 4°, PL, RO, CN
		-16	19.0								
		-17	20.0		Borehole BH01 terminated at 19.76 m Target depth						
		-18	21.0								
		-19	22.0								
		-20	23.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH02**
sheet:	1 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**15 Dec 2021**
principal:	
date completed:	**15 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 225 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N			E E E E		0.0		CL	**TOPSOIL**. **FILL: CLAY**: low plasticity, dark brown, trace fine to medium grained sand and fine grained gravel, trace rootlets.	<Wp			**TOPSOIL** **FILL** PID: 1.2 ppm
							CL-CI	**FILL: CLAY**: low to medium plasticity, pale brown, mottled grey.	>Wp	St		
					1.0			becoming pale brown				PID: 1.7 ppm
			SPT 3, 4, 6 N*=10					becoming red, mottled grey, increase in fine to medium grained gravel				**ALLUVIAL** HP 180 kPa iron staining HP 210 kPa HP 280 kPa PID: 1.8 ppm
					2.0							
			E SPT 4, 4, 6 N*=10		3.0							HP 230 kPa HP 240 kPa HP 270 kPa PID: 2.4 ppm
					4.0							
					5.0							
			SPT 3, 5, 6 N*=11		6.0			becoming pale grey, decreasing gravel content				HP 230 kPa HP 240 kPa HP 240 kPa PID: 3.5 ppm
					7.0							

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix
e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remoulded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH02**
sheet:	2 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**15 Dec 2021**
principal:	
date completed:	**15 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 225 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N					9.0		CL-CI	**FILL: CLAY**: low to medium plasticity, pale brown, mottled grey. *(continued)*	>Wp	St		**ALLUVIAL**
			SPT 5, 9, 10 N*=19				CL-CI SP	**FILL: Sandy CLAY**: low to medium plasticity, pale grey, mottled brown, fine to medium grained sand. **FILL: SAND**: medium to coarse grained, brown.	W	L		HP 280 kPa PID: 1.8 ppm HP 210 kPa HP 50 kPa
			SPT 9, 26, 31 N*=57		12.0		CI-CH	**Sandy CLAY**: medium to high plasticity, pale brown, fine to medium grained sand, trace extremely weathered rock.	>Wp	VSt		SPT Refusal PID: 2.4 ppm HP 50 kPa HP 320 kPa HP 370 kPa
HQ					15.0			Borehole BH02 continued as cored hole				

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller
* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH02**
sheet:	3 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**15 Dec 2021**
principal:	
date completed:	**15 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 225 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			9.0								
			10.0								
			11.0								
			12.0								
			13.0								
			14.0								
			15.0		started coring at 15.10m						
HQ					**Sandy CLAY (CL)**: low plasticity, pale grey, fine to medium grained sand, extremely weathered sandstone.	XW SW			74%		**PHEASANTS NEST FORMATION** PT, 12°, PL, RO, CN
					SANDSTONE: fine grained, pale grey, indistinctly bedded between 0-4°. shale band 20 mm thick						

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH02**
sheet:	4 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**15 Dec 2021**
principal:	
date completed:	**15 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 225 mm

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ					shalt band 70 mm thick **SANDSTONE**: fine grained, pale grey, indistinctly bedded between 0-4°. *(continued)*	SW			74%		**PHEASANTS NEST FORMATION** SM, 0°, PL, Sand, 50 mm
					shale band 20 mm thick carbonaceous rock, possibly coal, dark grey						PT, 2°, PL, RO, CN PT, 2°, PL, RO, CN
			17.0		**SILTSTONE**: dark grey, indistinctly bedded between 0-3°.						JT, 90°, PL, RO, CN
					sandstone band 50 mm thick distinctly laminated 0-5°						PT, 4°, PL, RO, CN
			18.0								JT, 9°, CU, RO, CN, 100 mm long PT, 13°, PL, RO, CN
					SANDSTONE: fine grained, pale grey, distinctly bedded.	FR			100%		PT, 10°, PL, RO, CN
			19.0		**SILTSTONE**: dark grey, distinctly bedded between 0-5°.						PT, 2°, PL, RO, CN PT, 2°, PL, RO, CN PT, 10°, PL, RO, CN
					carbonaceous rock possibly coal, dark grey						
			20.0		becoming pale grey						JT, 90°, healed JT, 90°, healed
					Borehole BH02 terminated at 20.50 m Target depth						
			21.0								
			22.0								
			23.0								

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Piezometer Installation Log

Hole ID.	**BH02**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**15 Dec 2021**
principal:	
date completed:	**15 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 225 mm

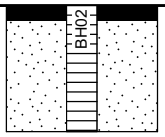
drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD / N	▶		0		**TOPSOIL**
					FILL
					ALLUVIAL
			4		
			8		
			12		
HQ			16		**PHEASANTS NEST FORMATION**
			20		

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:

0.00 m

2.50 m



Gatic Cover
Bentonite
Sand

method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH02	gas well				2.50 m				

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	1 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**11 Jan 2022**
principal:	
date completed:	**12 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 76/125

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD/T			E		0.0			**FILL: CLAY**: low plasticity, brown, with fine grained sand, with roots and rootlets, trace glass fragments 20-40 mm.	<Wp			**FILL** PID: 1.3 ppm 0.0 -0.3 m: Slight compost/organic odour, no visible ACM or staining PID: 1.7 ppm 0.3 - 0.8 m: No visible ACM, no visible staining, no odour
			E					**FILL: CLAY**: low to medium plasticity, dark brown to grey, with fine sub-angular sandstone gravel, trace fine grained sand, trace concrete fragments to 5 mm.				
			E CBR		1.0		CI-CH	**CLAY**: medium to high plasticity, pale grey mottled red-brown and yellow-brown, trace root fibres.		St		**ALLUVIAL** PID: 1.1 ppm
			SPT 3, 4, 6 N=10		2.0							1.5 m: No SPT sample recovery
							CI	**CLAY**: medium plasticity, grey and red-brown, with silt, trace fine grained sand, trace fine sub-angular iron indurated gravel.				3.0 - 3.5 m: Moist PID: 2.6 ppm HP 100 kPa HP 130 kPa HP 110 kPa HP 130 kPa
			SPT 2, 3, 5 N*=8		3.0		CI	**Sandy CLAY**: medium plasticity, grey, fine grained sand.	>Wp			
			SPT 3, 4, 3 N*=7		4.0			From 4.7 m: becoming pale grey spotted yellow-brown		F		HP 90 kPa HP 70 kPa HP 80 kPa HP 100 kPa
W		5% loss			5.0			From 5.0 m: grading to medium grained sand				
HWT			SPT 4, 7, 9 N*=16		6.0			From 6.0 m: medium to high plasticity clay		St - VSt		HP 200 kPa HP 270 kPa HP 240 kPa HP 260 kPa
							CI	**CLAY**: medium plasticity, pale grey, trace medium grained sand.				
			SPT 4, 6, 8 N*=14		7.0		CH	**Sandy CLAY**: high plasticity, grey, medium to coarse grained sand, trace fine sub-angular quartz gravel, trace decaying root fibres.				HP 220 kPa HP 250 kPa HP 200 kPa

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration: 1 2 3 — no resistance ranging to refusal

water: 10-Oct-12 water level on date shown; water inflow; water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH03**
sheet:	2 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**11 Jan 2022**
principal:	
date completed:	**12 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 76/125

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
W, ADT, HWT	1 2 3	5% loss					CH	**Sandy CLAY**: high plasticity, grey, medium to coarse grained sand, trace fine sub-angular quartz gravel, trace decaying root fibres. *(continued)*	>Wp	St - VSt		HP 280 kPa **ALLUVIAL**
			SPT 3, 6, 7 N*=13		9.0		CH	**CLAY**: high plasticity, pale grey mottled yellow-brown and red-brown, with fine grained sand.		St		9.0 m: Areas/zones of SPT sample that may indicate anaerobic conditions/environment. HP 200 kPa HP 250 kPa HP 200 kPa HP 170 kPa HP 150 kPa
					10.0							
					11.0			From 11.5 m: becoming pale grey				
			SPT 7, 14, 32/130mm N*=R		12.0		CH	**CLAY**: high plasticity, brown-orange and pale grey, relict rock fabric visible, laminated to bedded. Extremely weathered Interlaminated and Interbedded Sandstone (75%) and Siltstone (25%).		H		12.0 m: Areas/zones of SPT sample that may indicate anaerobic conditions/environment. HP 230 kPa HP 440 kPa HP 300 kPa **EXTREMELY WEATHERED INTERLAMINATED SANDSTONE AND SILTSTONE** HP 480 kPa HP >600 kPa
					13.0							
					14.0							
			SPT 31/50mm N*=R		15.0			**INTERLAMINATED AND INTERBEDDED SANDSTONE (75%) AND SILTSTONE (25%)**: pale blue-grey and dark grey, indistinctly bedded, fresh, inferred low to medium strength. Borehole BH03 continued as cored hole				**INTERLAMINATED AND INTERBEDDED SANDSTONE AND SILTSTONE**

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remoulded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH03**
sheet:	3 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**11 Jan 2022**
principal:	
date completed:	**12 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 76/125

drilling information				material substance			rock mass defects				
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			9.0								
			10.0								
			11.0								
			12.0								
			13.0								
			14.0								
			15.0		started coring at 15.05m						
NMLC	95-100% return				**INTERBEDDED AND INTERLAMINATED SANDSTONE (75%) AND SILTSTONE (25%)**: fine grained, pale blue-grey, siltstone is dark grey, disturbed to indistinctly laminated and bedded at 5-40°, with extensive randomly orientated microfractures and calcite veins up to 1 mm.	FR			86%		SM XW, 0°, PL, Clay, 40 mm, grey **INTERLAMINATED AND INTERBEDDED SANDSTONE AND SILTSTONE** JT, 85°, PL, RO, CN SM XW, 5°, PL, Clay, 20 mm, pale grey SZ, 0 - 10°, IR, RO, 80 mm, fine to

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH03**
sheet:	4 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**11 Jan 2022**
principal:	
date completed:	**12 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 76/125

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
NMLC	95-100% return		17.0		**INTERBEDDED AND INTERLAMINATED SANDSTONE (75%) AND SILTSTONE (25%)**: fine grained, pale blue-grey, siltstone is dark grey, disturbed to indistinctly laminated and bedded at 5-40°, with extensive randomly orientated microfractures and calcite veins up to 1 mm. *(continued)* 17.05 - 17.08 m: burrow structures 15.24 - 15.26 m: carbonaceous rich bed 17.28 to 17.50 m: disseminated pyrite crystals/flecks	FR MA FR			86% 83%		medium sub-angular rock fragments **INTERLAMINATED AND INTERBEDDED SANDSTONE AND SILTSTONE** JT, 75 - 80°, ST, RO, CN JT, 70 - 80°, IR, RO, CN JT, 30 - 45°, ST, SO, CN SZ, 40 - 60°, ST, RO, 220 mm, medium to coarse sub-angular and elongated rock fragments JT x 2, 30°, PL, SO, CN, 17.43 - 17.53 m CS, 5 - 10°, PL, SO, 30 mm, fine to medium platy rock fragments
			18.0		**SILTSTONE**: dark grey, indistinctly laminated at 5°, 10% fine grained, pale blue-grey sandstone laminations with scattered pyrite flecks. From 18.0 m: microfractured, 1% quartz clasts up to 2 mm						**SILTSTONE** JT, 70°, PL, SL, CN JT, 50 - 65°, ST, RO, CN JT, 5 - 40°, CU, SO, CN JT, 5 - 40°, CU, SO, CN JT, 85°, PL, RO, CN, incipient joint
			19.0		**SANDSTONE**: fine to medium grained, pale blue-grey to grey, indistinctly bedded at 5-10° to massive, 5% dark grey siltstone laminations, with randomly orientated microfractures. 18.87 to 19.14 m: pale grey meta siltstone bed 18.93 to 18.97 m: burrow structures				96%		**SANDSTONE** SM Sheared, 10 - 15°, UN, 30 mm, sandy clay with medium sub-angular gravel
			20.0		From 19.65 m: calcite present within matrix, scattered rounded to sub-angular quartz and polylithic clasts up to 20 mm 20.36 to 20.62 m: grey to dark grey						JT, 20 - 45°, ST, RO, CN PT, 15 - 20°, UN, RO, Clayey sand VN
					NO CORE: 0.03 m	MA					SM Sheared, 10 - 40°, IR, Sandy clay, 140 mm
			21.0		**SANDSTONE**: fine to medium grained, pale blue-grey to grey, indistinctly bedded at 5-10° to massive, 5% dark grey siltstone laminations, with randomly orientated microfractures. 21.18 to 21.39 m: pale blue-grey to dark grey meta siltstone laminations and beds up to 25 mm, calcite veins to 1 mm, fabric convoluted				94%		SM XW, 5°, PL, Sandy clay, 20 mm
			22.0								PT, 10 - 25°, UN, RO, CN SM Sheared, 60°, PL, Sandy clay, 70 mm
					Borehole BH03 terminated at 22.23 m Target depth Backfilled with Spoil						
			23.0								

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	***BH04***
sheet:	1 of 4
project no.	***754-SYDGE295047***
client:	***NS Projects Pty Ltd***
date started:	***09 Dec 2021***
principal:	
date completed:	***09 Dec 2021***
project:	***St George Illawarra Dragons' Facility***
logged by:	***CP***
location:	***7-9 Squires Way, Fairy Meadows***
checked by:	***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N			E					**TOPSOIL**.	M	VL		**TOPSOIL**
			E				CL-CI	**FILL: Gravelly SAND**: fine to medium grained, dark brown, fine to medium grained angular to sub-angular gravel, trace rootlets.	<Wp	L		**FILL** PID: 0.7 ppm
			E					**Sandy CLAY**: low to medium plasticity, dark brown, fine to medium grained sand, trace rootlets.				**ALLUVIAL** PID: 1.2 ppm
			E		1.0		CL-CI	**CLAY**: low to medium plasticity, orange.	>Wp	St		PID: 0.9 ppm
			E SPT 1, 3, 5 N*=8					becoming pale grey, mottled red				iron staining PID: 0.6 ppm
					2.0							
			E SPT 1, 3, 4 N*=7		3.0							PID: 2.1 ppm
					4.0							
			E SPT 3, 5, 7 N*=12					becoming pale brown, mottled orange, trace fine to medium grained gravel				PID: 0.4 ppm
		▶			5.0							
			SPT 3, 3, 5 N*=8		6.0							PID: 0.8 ppm
					7.0					VSt		
			SPT 4, 6, 7 N*=13					becoming pale grey, mottled red, decreasing gravel content				PID: 0.6 ppm

method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH04**
sheet:	2 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**09 Dec 2021**
principal:	
date completed:	**09 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD N	1 2 3				9.0		CL-CI	**CLAY**: low to medium plasticity, orange. *(continued)*	>Wp	VSt	100 200 300 400	**ALLUVIAL**
			SPT 3, 4, 6 N*=10									PID: 1.2 ppm
					10.0							
					11.0							
					12.0		SP	**SAND**: medium to coarse grained, pale brown.	W	L		
			SPT 3, 6, 8 N*=14				SC	**CLAYEY SAND**: fine to medium grained, pale grey, low plasticity clay.		F		
					13.0							
					14.0							
					15.0							SPT Refusal
			SPT 31, 0, 0 N*=0					Borehole BH04 continued as cored hole				

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH04**
sheet:	3 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**09 Dec 2021**
principal:	
date completed:	**09 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 X = axial; O = diametral VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			9.0								
			10.0								
			11.0								
			12.0								
			13.0								
			14.0								
			15.0		started coring at 15.10m						
HQ					**Gravelly CLAY (CL-CI)**: low to medium plasticity, dark brown, fine to medium grained gravel, extremely weathered rock shale.	XW MW - HW			11%		**PHEASANTS NEST FORMATION** CS, 0°, PL, RO, CN, 50 mm PT, 2°, PL, RO, CN
					SILTSTONE: dark grey, distinctly bedded between 0-4°. becoming pale grey				27%		PT, 6°, PL, RO, VN - Clay PT, 6°, PL, RO, VN - Clay PT, 4°, PL, RO, CN

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH04**
sheet:	4 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**09 Dec 2021**
principal:	
date completed:	**09 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information				material substance					rock mass defects		
method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			17.0		becoming dark grey						SM, 15°, PL, RO, Clay JT, 50°, CU, RO, CN PT, 5°, IR, RO, CN JT, 90°, CU, RO, CN
					NO CORE: 0.30 m						**PHEASANTS NEST FORMATION**
					SILTSTONE: dark grey, distinctly bedded between 0-4°.	MW - HW			27%		SZ, PL, RO, CN, 110 mm PT, 20°, PL, RO, CN PT, 40°, PL, RO, CN PT, 3°, PL, RO, CN PT, 2°, PL, RO, CN PT, 4°, PL, RO, VN - Clay
					Sandy CLAY (CL): low plasticity, pale grey, fine to medium grained sand, (possibly extremely weathered sandstone).	XW					
					NO CORE: 0.10 m	XW					
			18.0		**Sandy CLAY (CL)**: low plasticity, pale grey, fine to medium grained sand, (possibly extremely weathered sandstone).	MW			51%		PT, 7°, PL, RO, CN
					SANDSTONE: fine to medium grained, pale grey, distinctly bedded 0-4°.	XW MW					CS, 2°, PL, 50 mm
					Sandy CLAY (CL): low plasticity, pale grey, fine to medium grained sand, extremely weathered sandstone.						CS, 3°, PL, 50 mm
			19.0		**SANDSTONE**: fine to medium grained, pale grey, indistinctly bedded between 0-4°.	MW - HW					PT, 7°, CU, RO, CN
					SILTSTONE: dark grey, distinctly bedded between 0-4°.	SW - MW			50%		PT, 4°, PL, RO, CN PT, 2°, PL, RO, CN
					NO CORE: 0.23 m						PT, 3°, PL, RO, CN
			20.0		**SANDSTONE**: fine to medium grained, pale grey, massive.						PT, 2°, PL, RO, CN PT, 2°, PL, RO, CN JT, 65°, CU, RO, CN SM, 2°, PL, Clay, 5 mm PT, 5°, PL, RO, VN - Clay CS, 3°, PL, RO, 40 mm PT, 10°, PL, RO, CN PT, 2°, PL, RO, CN PT, 2°, PL, RO, CN PT, 5°, PL, RO, CN
					Borehole BH04 terminated at 20.65 m Target depth						
			21.0								
			22.0								
			23.0								

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH05**
sheet:	1 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Dec 2021**
principal:	
date completed:	**14 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD / N			E					**TOPSOIL**.				**TOPSOIL**
			E					**FILL: SAND**: fine to medium grained, dark brown, trace rootlets and fine to medium grained gravel.	M	L		**FILL**
												PID: 1.7 ppm
							CH	**CLAY**: low to medium plasticity, dark brown, trace fine to medium grained sand.	<Wp	F		**ALLUVIAL**
			E		1.0			becoming pale brown, mottled dark brown				PID: 1.1 ppm
			E CBR SPT 3, 3, 5 N*=8					becoming pale brown, mottled grey				HP 120 kPa HP 130 kPa PID: 1.2 ppm HP 120 kPa
					2.0							
			E SPT 2, 4, 6 N*=10		3.0			trace fine to medium grained gravel				HP 140 kPa PID: 10.7 ppm HP 160 kPa HP 150 kPa
					4.0							
			SPT 2, 3, 3 N*=6				SC	**CLAYEY SAND**: fine to medium grained, dark brown, mottled grey, low plasticity clay.	W	S		possible acid surface was dark sand HP 50 kPa HP 60 kPa HP 80 kPa PID: 11.8 ppm
					5.0							
					6.0							
			SPT 1, 1, 1 N*=2									HP 40 kPa HP 50 kPa HP 50 kPa PID: 10.7 ppm
					7.0							
			SPT 2, 5, 8 N*=13				CL-CI	**CLAY**: low to medium plasticity, pale grey.	>Wp	St		HP 180 kPa HP 180 kPa HP 200 kPa

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH05**
sheet:	2 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Dec 2021**
principal:	
date completed:	**14 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N							CL-CI	**CLAY**: low to medium plasticity, pale grey. *(continued)*	>Wp	St		PID: 11.3 ppm **ALLUVIAL**
			SPT 3, 4, 7 N*=11		9.0			decrease in gravel content			HP 210 kPa HP 210 kPa HP 220 kPa	PID: 11.4 ppm
					10.0							
					11.0							
			SPT 4, 8, 12 N*=20		12.0		CL-CI	**Sandy CLAY**: medium to high plasticity, pale grey, fine to medium grained sand.			HP 240 kPa HP 240 kPa HP 310 kPa	PID: 11.5 ppm
					13.0							
					14.0							
			SPT 31/80mm N*=R		15.0			extremely weathered rock content increasing Borehole BH05 continued as cored hole				

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH05**
sheet:	3 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Dec 2021**
principal:	
date completed:	**14 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
			9.0								
			10.0								
			11.0								
			12.0								
			13.0								
			14.0								
			15.0		started coring at 15.10m						
HQ					**SILTSTONE**: pale grey, distinctly bedded between 0-5°. becoming dark grey becoming pale grey	MW - HW MW			45%		**PHEASANTS NEST FORMATION** SM, 20 mm, Clay SM, 30 mm, Clay PT, 20°, PL, RO, CN, 60 mm PT, 13°, PL, RO, CN PT, 10°, PL, RO, CN

method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Cored Borehole

Borehole ID.	**BH05**
sheet:	4 of 4
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Dec 2021**
principal:	
date completed:	**14 Dec 2021**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter :

drilling information | **material substance** | **rock mass defects**

method & support	water	RL (m)	depth (m)	graphic log	material description **ROCK TYPE**: grain characterisics, colour, structure, minor components	weathering & alteration	estimated strength & Is50 (X = axial; O = diametral) VL L M H VH EH	samples, field tests & Is(50) (MPa) a = axial; d = diametral	core run & RQD	defect spacing (mm) 30 100 300 1000 3000	additional observations and defect descriptions (type, inclination, planarity, roughness, coating, thickness, other) particular / general
HQ			17.0		**SILTSTONE**: pale grey, distinctly bedded between 0-5°. *(continued)*	MW			45%		PT, 5°, PL, RO, CN JT, 90°, PL, RO, CN, 220 mm **PHEASANTS NEST FORMATION** PT, 30°, PL, RO, CN PT, 7°, PL, RO, CN PT, 12°, PL, RO, CN JT, 100°, CU, RO, CN, 90 mm PT, 15°, PL, RO, CN PT, 8°, PL, RO, CN
					possibly carbonaceous rock, very dark (16.83-16.87 m) becoming dark grey				65%		PT, 3°, PL, RO, CN CS, 5°, 5 mm, Clay PT, 3°, PL, RO, CN PT, 15°, PL, RO, CN PT, 10°, PL, RO, CN PT, 5°, PL, RO, CN JT, 55°, CU, RO, CN
			18.0		becoming pale grey	SW					
					NO CORE: 0.45 m				40%		
			19.0		**Sandy CLAY (CL-CI)**: low to medium plasticity, pale grey, fine to medium grained sand, extremely weathered rock.	XW					
					SILTSTONE: fine grained, pale grey, distinctly bedded between 0-5°.	SW					PT, 5°, PL, RO, CN
			20.0		**SANDSTONE**: fine to medium grained, pale grey, massive. 30 mm thick conglomerate band, indistinctly bedded between 0-5°				77%		PT, 2°, PL, RO, CN JT, 90°, PL, RO, CN, 40 mm PT, 3°, PL, RO, CN PT, 2°, PL, RO, CN
					Borehole BH05 terminated at 20.65 m Target depth						
			21.0								
			22.0								
			23.0								

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method
DT diatube
NMLC NMLC core (51.9 mm)
NQ wireline core (47.6mm)
HQ wireline core (63.5mm)
PQ wireline core (85.0mm)
RR rock roller

support
C casing M mud N none

water
10/10/12, water level on date shown
water inflow
complete drilling fluid loss
partial drilling fluid loss
25uL water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
core recovered (graphic symbols indicate material)
no core recovered

core run & RQD
barrel withdrawn
RQD = Rock Quality Designation (%)

weathering & alteration*
RS residual soil
XW extremely weathered
HW highly weathered
MW moderately weathered
SW slightly weathered
FR fresh
*W replaced with A for alteration

strength
VL very low
L low
M medium
H high
VH very high
EH extremely high

defect type
PT parting
JT joint
SS sheared surface
SZ sheared zone
CO contact
CS crushed seam
SM seam

roughness
VR very rough
RO rough
SO smooth
POL polished
SL slickensided

planarity
PL planar
CU curved
UN undulating
ST stepped
IR Irregular

coating
CN clean
SN stained
VN veneer
CO coating

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH06**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**16 Dec 2022**
principal:	
date completed:	**16 Dec 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N			E		0.0			**TOPSOIL**.				**TOPSOIL**
			E					**FILL: Gravelly CLAY**: low plasticity, dark brown, fine to medium grained angular to sub-angular gravel, trace rootlets.	<Wp	S		**FILL** PID: 1.8 ppm PID: 1.9 ppm
			E		1.0		CL-CI	**CLAY**: low to medium plasticity, pale brown, trace fine grained gravel.	>Wp	St		**ALLUVIAL** PID: 1.8 ppm
			E		2.0			becoming pale red, trace fine grained gravel				PID: 2.1 ppm
			E		3.0			decrease in gravel content				PID: 1.5 ppm
			E		4.0			becoming pale brown, increase in sand content				PID: 1.4 ppm
					5.0		CL	**Sandy CLAY**: low plasticity, pale brown, fine to medium grained sand.	<Wp	S		
					6.0			Borehole BH06 terminated at 6.3 m Target depth				
					7.0							

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

Hole ID.	**BH06**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**16 Dec 2022**
principal:	
date completed:	**16 Dec 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

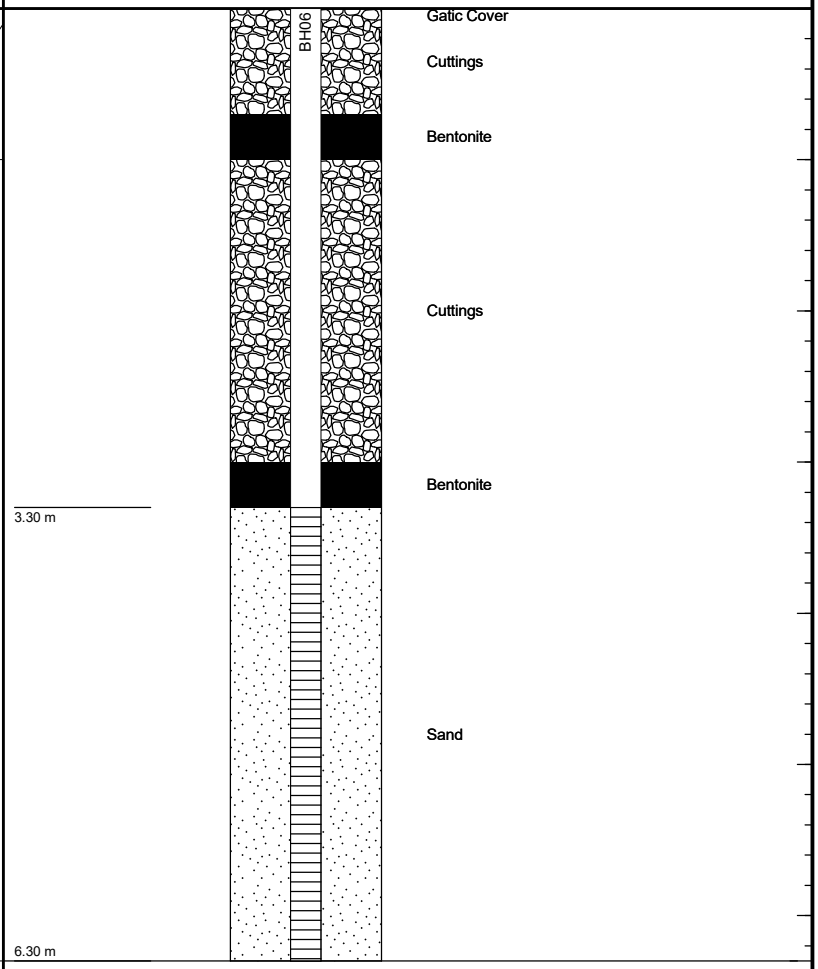
equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD / N			0		**TOPSOIL**
					FILL
			1		**ALLUVIAL**
			2		
			3		
			4		
			5		
			6		
			7		

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company:
driller:
driller's permit no.:



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 — water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH06	standpipe piezometer				6.30 m				

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH07**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Jan 2022**
principal:	
date completed:	**13 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD/T — N			E E		0.0			**FILL: Sandy CLAY**: low plasticity, dark brown, fine grained sand, with roots and rootlets.	<Wp			PID: 1.2 ppm 0.0 - 0.3m: Slight organic/decomposing odour, no visible ACM or staining
			E E				SC	**CLAYEY SAND**: fine to medium grained, yellow-brown, low plasticity clay.	M	L		PID: 1.1 ppm
			E				CL-CI	**Sandy CLAY**: low to medium plasticity, brown, fine to medium grained sand.	<Wp	F		PID: 1.3 ppm PID: 0.8 ppm PID: 0.6 ppm
			SPT 4, 7, 7 N*=14		1.0		CI-CH	**Sandy CLAY**: medium to high plasticity, pale grey mottled yellow-brown and orange-brown, fine to medium grained sand.		St - VSt		PID: 0.7 ppm HP 250 kPa HP 340 kPa HP 150 kPa HP 240 kPa
		▶	SPT 2, 5, 7 N*=12		2.0 3.0		CI	**CLAY**: medium plasticity, grey mottled orange-red, trace fine grained sand, trace wood fragments (possibly decomposed).	>Wp	St		HP 100 kPa HP 110 kPa HP 80 kPa
			D		4.0		CI-CH	**CLAY**: medium to high plasticity, dark grey mottled red-brown.				HP 170 kPa HP 220 kPa
					5.0			Borehole BH07 terminated at 5.0 m Target depth Standpipe Piezometer Installed				
					6.0							
					7.0							

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

client:	***NS Projects Pty Ltd***	Hole ID.	***BH07***
principal:		sheet:	1 of 1
project:	***St George Illawarra Dragons' Facility***	project no.	***754-SYDGE295047***
location:	***7-9 Squires Way, Fairy Meadows***	date started:	***13 Jan 2022***
		date completed:	***13 Jan 2022***
		logged by:	***RAS***
		checked by:	***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

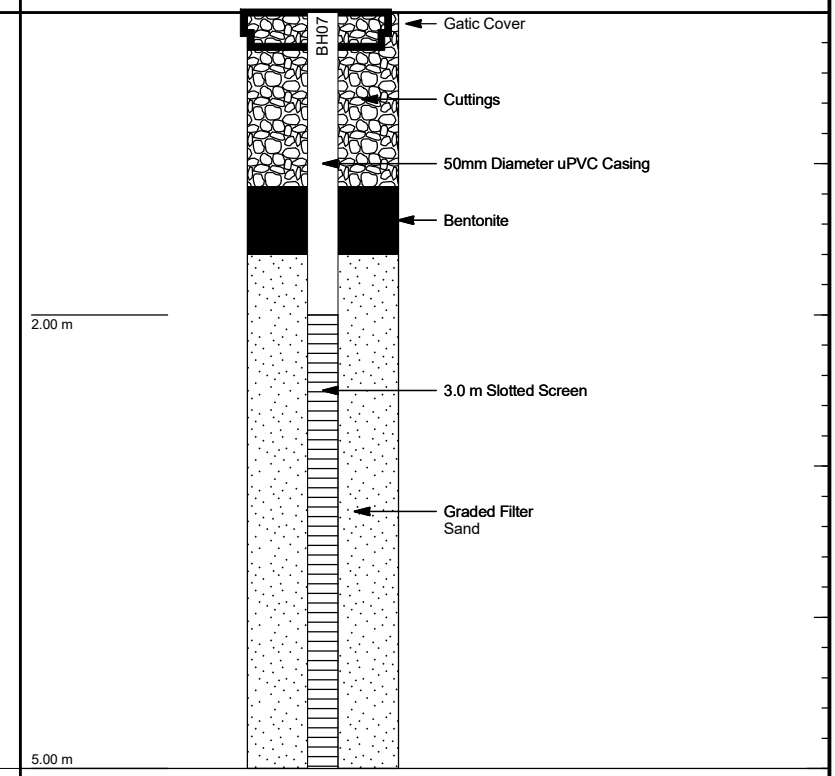
equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, N	▶		0–5		

completion details: Gatic Cover
pvc type: uPVC
sand type:
grout type:

bore construction license:
drilling company: Terratest
driller: Jono
driller's permit no.:



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH07	standpipe piezometer				5.00 m				

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH08**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**16 Dec 2022**
principal:	
date completed:	**16 Dec 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD N			E		0.0		CL	**TOPSOIL**.				**TOPSOIL**
			E				CL	**FILL: Sandy CLAY**: low plasticity, dark brown, fine grained sand, trace rootlets, fine to medium grained gravel.	<Wp	S		**FILL** PID: 1.2 ppm
			E					**Gravelly CLAY**: low plasticity, dark brown, fine to medium grained angular to sub-angular gravel.				**ALLUVIAL** PID: 1.2 ppm
					1.0		CL-CI	**CLAY**: low to medium plasticity, pale brown, mottled grey.	>Wp	St		PID: 1.6 ppm
			E		2.0							PID: 1.4 ppm
			E		3.0							PID: 1.7 ppm
			E		4.0			trace fine grained gravel				PID: 1.2 ppm
			E		5.0							PID: 0.8 ppm
					6.0							
					7.0			Borehole BH08 terminated at 6.3 m Target depth				

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

Hole ID.	**BH08**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**16 Dec 2022**
principal:	
date completed:	**16 Dec 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**CP**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

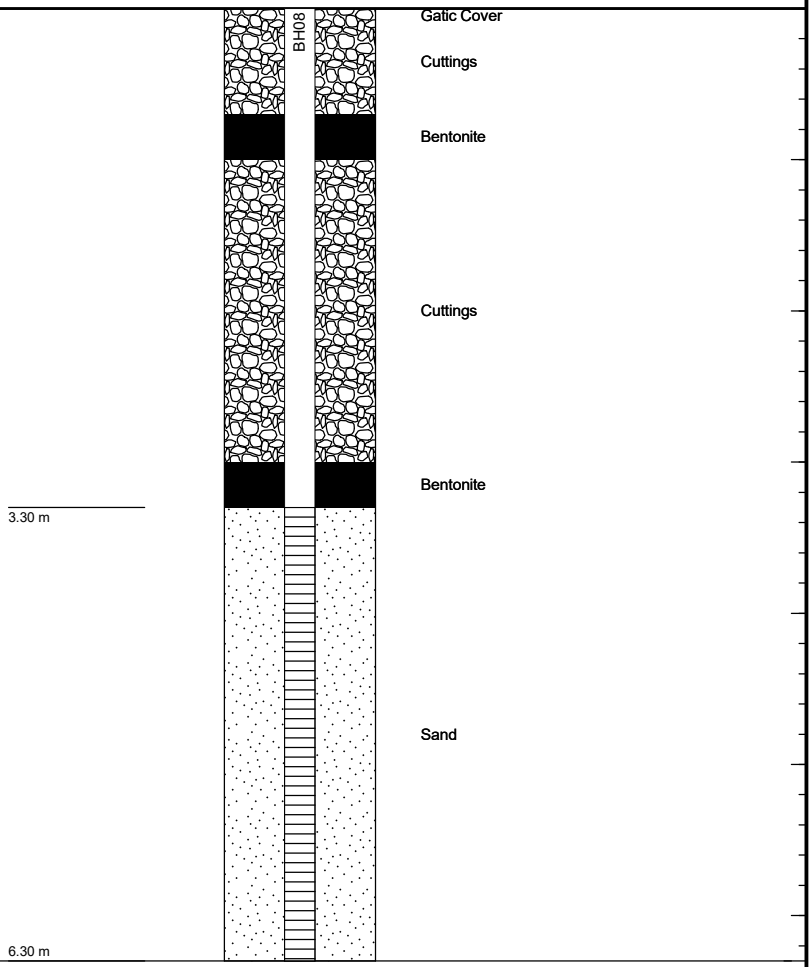
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD / N	▶		0		**TOPSOIL**
					FILL
					ALLUVIAL
			1		
			2		
			3		
			4		
			5		
			6		
			7		

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company:
sand type: | driller:
grout type: | driller's permit no.:



method & support see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH08	standpipe piezometer				6.30 m				

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH09**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**13 Jan 2022**
principal:	
date completed:	**13 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
AD/T, N	1 2 3	▶	E E E E				CL	**FILL: CLAY**: low plasticity, dark grey, with fine grained sand, with roots and rootlets, trace medium to coarse sub-angular coal gravel.	<Wp			PID: 1 ppm 0.0 - 0.3 m: No visible ACM, no visible staining, no odour
								Sandy CLAY: low plasticity, brown, fine to medium grained sand.	>Wp	S - F		PID: 0.9 ppm PID: 1.3 ppm
					1.0		CL-CI	**CLAY**: low to medium plasticity, pale grey mottled yellow-brown and orange-red.				PID: 1.1 ppm
			SPT 3, 4, 6 N*=10		2.0		CI	**CLAY**: medium plasticity, grey mottled orange-brown, trace decaying root fibres.		St	100 200 300 400	HP 100 kPa HP 140 kPa HP 150 kPa HP 170 kPa
			SPT 2, 5, 5 N*=10		3.0		CI-CH	**CLAY**: medium to high plasticity, pale grey mottled yellow-brown and red-brown, with fine grained sand.				PID: 1.6 ppm HP 150 kPa HP 200 kPa HP 200 kPa HP 140 kPa
					4.0		CI	**Sandy CLAY**: medium plasticity, pale grey mottled yellow-brown, fine grained sand, trace fine sub-angular iron indurated gravel.				
					5.0			Borehole BH09 terminated at 5.0 m Target depth Standpipe Piezometer Installed				
					6.0							
					7.0							

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 — no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

DRAFT

Piezometer Installation Log

client:	***NS Projects Pty Ltd***	date started:	***13 Jan 2022***
principal:		date completed:	***13 Jan 2022***
project:	***St George Illawarra Dragons' Facility***	logged by:	***RAS***
location:	***7-9 Squires Way, Fairy Meadows***	checked by:	***AJB***

Hole ID. ***BH09***
sheet: 1 of 1
project no. ***754-SYDGE295047***

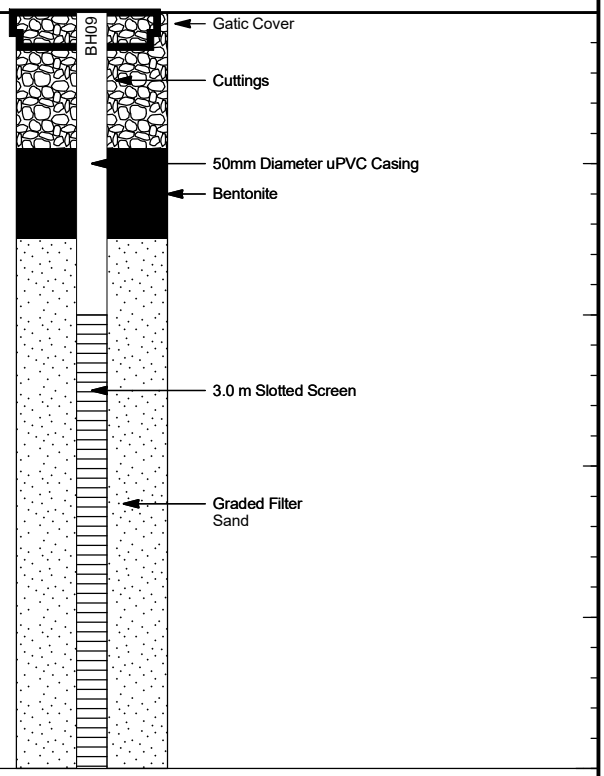
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°
equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance** | **piezometer construction details**

method & support	water	RL (m)	depth (m)	graphic log	material description (refer to engineering log for full description)
AD/T, N			0–5		

completion details: Gatic Cover
pvc type:
sand type:
grout type:

bore construction license:
drilling company: Terratest
driller: Jono
driller's permit no.:



method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 — water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH09	standpipe piezometer				5.00 m				

TETRA TECH COFFEY

Engineering Log - Borehole

Borehole ID.	**BH10**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**14 Jan 2022**
principal:	
date completed:	**14 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
AD/T, N		▶	E		0.0			**FILL: Sandy CLAY**: low plasticity, dark brown, fine grained sand, with rootlets and root fibres.	<Wp			PID: 2.6 ppm PID: 1.9 ppm 0.0 - 0.65 m: Slight organic/decomposing odour, no visible ACM or staining
			E									PID: 1.7 ppm
			E				CI	**CLAY**: medium plasticity, pale grey and yellow-brown.		F		
					1.0							PID: 1.4 ppm
			SPT 3, 5, 6 N*=11				CI-CH	**CLAY**: medium to high plasticity, grey mottled orange-red and brown, trace fine grained sand, trace root fibres (possibly decomposed).		St		PID: 0.9 ppm HP 140 kPa HP 200 kPa HP 150 kPa HP 180 kPa
					2.0							
			SPT 3, 4, 5 N*=9				CI-CH	**CLAY**: medium to high plasticity, grey mottled yellow-brown and brown, with fine grained sand.				PID: 0.7 ppm HP 170 kPa HP 180 kPa HP 100 kPa HP 150 kPa
					3.0							
					4.0							4.0 - 5.5 m: Moist
			SPT 4, 6, 8 N*=14				CI	**Sandy CLAY**: medium plasticity, grey mottled red-brown and orange, fine grained sand.		St - VSt		PID: 1.1 ppm HP 250 kPa HP 250 kPa HP 310 kPa HP 210 kPa HP 280 kPa
					5.0			From 5.0 m: becoming grey mottled yellow-brown	>Wp			
			SPT 1, 3, 4 N*=7		6.0			From 6.0 m: becoming dark grey mottled orange-brown and brown, trace silt		F		HP 60 kPa HP 70 kPa HP 80 kPa HP 60 kPa HP 100 kPa
					7.0			Borehole BH10 terminated at 6.5 m Target depth Standpipe Piezometer Installed				

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Piezometer Installation Log

Hole ID.	**BH10**
sheet:	1 of 1
project no.	**754-SYDGE295047**
client:	**NS Projects Pty Ltd**
date started:	**14 Jan 2022**
principal:	
date completed:	**14 Jan 2022**
project:	**St George Illawarra Dragons' Facility**
logged by:	**RAS**
location:	**7-9 Squires Way, Fairy Meadows**
checked by:	**AJB**

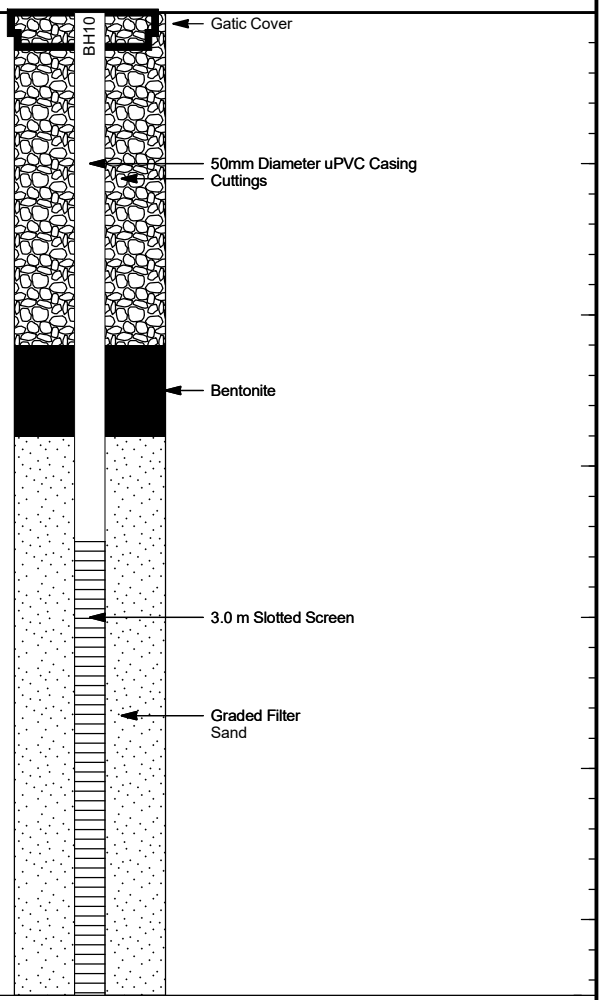
position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

equipment type: Comacchio 305, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance** | **piezometer construction details**

method & support | water | RL (m) | depth (m) | graphic log | **material description (refer to engineering log for full description)**

completion details: Gatic Cover | bore construction license:
pvc type: | drilling company: Terratest
sand type: | driller: Jono
grout type: | driller's permit no.:



AD/T
N

1 2 3 4 5 6 7

method & support
see engineering log for details

water
- 10-Oct-12, water level on date shown
- water inflow
- complete drilling fluid loss
- partial drilling fluid loss
- 25 water pressure test result (lugeons) for depth interval shown

graphic log / core recovery
- core recovered (graphic symbols indicate material)
- no core recovered

ID	type	installation date	development date	stickup (m)	tip depth (m)	water level (m)	Relative Levels (AHD) stickup	tip	water level
BH10	standpipe piezometer				6.50 m				

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT01***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.4 ppm
			E					**CLAY**: low to medium plasticity, pale brown, mottle grey, trace rootlets.		St		**ALLUVIAL** PID: 0.4 ppm
					0.5							
					1.0			becoming mottled red				PID: 0.5 ppm
			E									
								Hand Auger HA/CPT01 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT02***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.4 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.		St		**ALLUVIAL** PID: 0.4 ppm
			E		1.0			becoming mottled red, trace gravel				PID: 0.5 ppm
					1.5			Hand Auger HA/CPT02 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT03***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.7 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.		St		**ALLUVIAL** PID: 0.5 ppm
			E		1.0			becoming mottled red, trace gravel				PID: 0.4 ppm
					1.5			Hand Auger HA/CPT03 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT04***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.5 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets, trace wood.		St		**ALLUVIAL** PID: 0.6 ppm
					1.0			becoming mottled red, trace gravel				
			E									PID: 0.4 ppm
								Hand Auger HA/CPT04 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

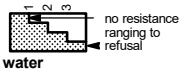
CDF_0_10_00.3_LIBRARY.GLB rev:CDF_0_10_00.3 2020-08-25 Log COF BOREHOLE: NON CORED 754-SYDGE295047 CPT.GPJ <<DrawingFile>> 27/01/2022 11:17

method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

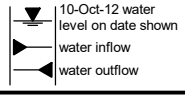
support
- M mud
- C casing
- N nil

penetration



no resistance ranging to refusal

water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT05***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.4 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.		St		**ALLUVIAL** PID: 0.3 ppm
			E		1.0			becoming mottled red, trace rootlets				PID: 0.4 ppm
					1.5			Hand Auger HA/CPT05 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT06***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.3 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets, trace wood.		St		**ALLUVIAL** PID: 0.4 ppm
			E		1.0			becoming mottled red, trace gravel				PID: 0.4 ppm
					1.5			Hand Auger HA/CPT06 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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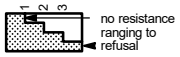
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

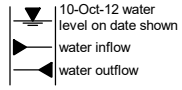
* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration



water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT07***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client:	***NS Projects Pty Ltd***
date started:	***08 Dec 2021***
principal:	
date completed:	***08 Dec 2021***
project:	***St George Illawarra Dragons' Facility***
logged by:	***CP***
location:	***7-9 Squires Way, Fairy Meadows***
checked by:	***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (SOIL NAME: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.6 ppm
			E					**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.		St		**ALLUVIAL** PID: 0.7 ppm
					0.5							
					1.0			becoming mottled red				PID: 0.5 ppm
			E									
								Hand Auger HA/CPT07 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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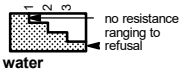
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

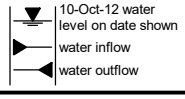
* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration



water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT08***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***08 Dec 2021***
principal:	date completed: ***08 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	D			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.5 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets, trace gravel.	>Wp	St		**ALLUVIAL** PID: 0.5 ppm
			E		1.0			becoming mottled red				PID: 0.4 ppm
					1.5			Hand Auger HA/CPT08 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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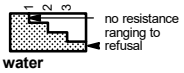
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

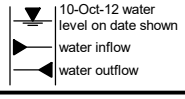
support
- M mud
- C casing
- N nil

penetration



no resistance ranging to refusal

water


10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT09***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.3 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets, trace wood.		St		**ALLUVIAL** PID: 0.4 ppm
			E		1.0			becoming mottled red, trace gravel				PID: 0.3 ppm
					1.5			Hand Auger HA/CPT09 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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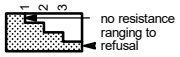
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

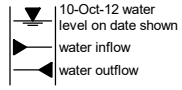
* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration



water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT10***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration (1 2 3)	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa)	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	D			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.4 ppm
			E					**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.	>Wp	St		**ALLUVIAL** PID: 0.6 ppm
					0.5							
					1.0			becoming mottled red				PID: 0.3 ppm
			E									
								Hand Auger HA/CPT10 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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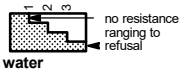
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

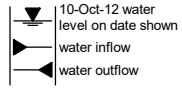
* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration



water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT11***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client:	***NS Projects Pty Ltd***
date started:	***09 Dec 2021***
principal:	
date completed:	***09 Dec 2021***
project:	***St George Illawarra Dragons' Facility***
logged by:	***CP***
location:	***7-9 Squires Way, Fairy Meadows***
checked by:	***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	D			**TOPSOIL**
			E					**FILL: Gravelly CLAY**: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.5 ppm
					0.5			**CLAY**: low to medium plasticity, pale brown, mottled grey, trace rootlets.	>Wp	St		**ALLUVIAL** PID: 0.7 ppm
			E		1.0							PID: 0.4 ppm
								Hand Auger HA/CPT11 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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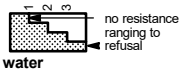
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

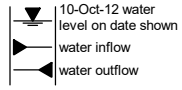
* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration



water



samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT12***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 1.2 ppm
			E					**Sandy CLAY**: low to medium plasticity, dark brown, fine to medium grained sand, trace rootlets.		St		**ALLUVIAL** PID: 1.1 ppm
					0.5							
					1.0			becoming mottled red, trace gravel				PID: 0.8 ppm
			E									
								Hand Auger HA/CPT12 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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method
DT diatube
AD auger drilling*
AS auger screwing*
HA hand auger
W washbore
RR rock roller

* bit shown by suffix
e.g. AD/T
B blank bit
T TC bit
V V bit

support
M mud
C casing
N nil

penetration
1 2 3 no resistance ranging to refusal

water
10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
B bulk disturbed sample
D disturbed sample
E environmental sample
SS split spoon sample
U## undisturbed sample ##mm diameter
HP hand penetrometer (kPa)
N standard penetration test (SPT)
N* SPT - sample recovered
Nc SPT with solid cone
VS vane shear; peak/remouded (kPa)
R refusal
HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
D dry
M moist
W wet
Wp plastic limit
Wl liquid limit

consistency / relative density
VS very soft
S soft
F firm
St stiff
VSt very stiff
H hard
Fb friable
VL very loose
L loose
MD medium dense
D dense
VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT13***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	M			**TOPSOIL**
								FILL: Gravelly SAND: fine to medium grained, dark brown, fine to medium, angular to sub-angular grained gravel, trace rootlets.				**FILL** PID: 0.8 ppm
			E		0.5			**Sandy CLAY**: low to medium plasticity, dark brown, fine to medium grained sand, trace rootlets, trace gravel.	>Wp	St		**ALLUVIAL** PID: 0.7 ppm
			E		1.0			**CLAY**: low to medium plasticity, pale grey, mottled red.				PID: 0.4 ppm
								Hand Auger HA/CPT13 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remouded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT14***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	>Wp			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium, angular to sub-angular grained gravel, trace rootlets.				**FILL** PID: 0.5 ppm
			E					**Sandy CLAY**: low to medium plasticity, dark brown, fine to medium grained sand, trace rootlets, trace gravel.		St		**ALLUVIAL** PID: 0.3 ppm
					0.5							
					1.0			**CLAY**: low to medium plasticity, pale grey, mottled red.				PID: 0.3 ppm
			E									
								Hand Auger HA/CPT14 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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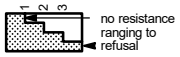
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

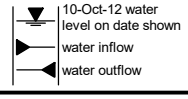
support
- M mud
- C casing
- N nil

penetration



no resistance ranging to refusal

water


10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT15***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	M			**TOPSOIL**
								FILL: SAND: fine to medium grained, dark brown, trace fine to medium grained, angular to sub-angular gravel.				**FILL** PID: 0.4 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale grey, mottled red, trace gravel.	>Wp	St		**ALLUVIAL** PID: 0.3 ppm
			E		1.0			becoming mottled pale brown				PID: 0.2 ppm
					1.5			Hand Auger HA/CPT15 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remoulded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT16***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information | **material substance**

method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description (**SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components)	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	M			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.8 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale grey, mottled brown, trace rootlets.	>Wp	St		**ALLUVIAL** PID: 0.9 ppm
			E		1.0			**Sandy CLAY**: low to medium plasticity, pale grey, mottled red, fine to medium grained sand.				PID: 0.8 ppm
					1.5			Hand Auger HA/CPT16 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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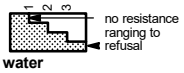
method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix e.g. AD/T
- B blank bit
- T TC bit
- V V bit

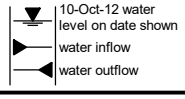
support
- M mud
- C casing
- N nil

penetration



no resistance ranging to refusal

water


10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT17***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	M			**TOPSOIL**
								FILL: SAND: fine to medium grained, dark brown, trace fine to medium grained, angular to sub-angular gravel.				**FILL** PID: 0.5 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale grey, mottled red, trace gravel.	>Wp	St		**ALLUVIAL** PID: 0.6 ppm
			E		1.0			**Sandy CLAY**: low to medium plasticity, pale grey, mottled red, fine to medium grained sand.				PID: 0.6 ppm
					1.5			Hand Auger HA/CPT17 terminated at 1.2 m Target depth				
					2.0							
					2.5							
					3.0							
					3.5							

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method

DT	diatube
AD	auger drilling*
AS	auger screwing*
HA	hand auger
W	washbore
RR	rock roller
*	bit shown by suffix
e.g.	AD/T
B	blank bit
T	TC bit
V	V bit

support

M	mud
C	casing
N	nil

penetration

1 2 3 — no resistance ranging to refusal

water

10-Oct-12 water level on date shown
water inflow
water outflow

samples & field tests

B	bulk disturbed sample
D	disturbed sample
E	environmental sample
SS	split spoon sample
U##	undisturbed sample ##mm diameter
HP	hand penetrometer (kPa)
N	standard penetration test (SPT)
N*	SPT - sample recovered
Nc	SPT with solid cone
VS	vane shear; peak/remoulded (kPa)
R	refusal
HB	hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition

D	dry
M	moist
W	wet
Wp	plastic limit
Wl	liquid limit

consistency / relative density

VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fb	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	very dense

TETRA TECH COFFEY

Engineering Log - Hand Auger

Borehole ID.	***HA/CPT18***
sheet:	1 of 1
project no.	***754-SYDGE295047***
client: ***NS Projects Pty Ltd***	date started: ***09 Dec 2021***
principal:	date completed: ***09 Dec 2021***
project: ***St George Illawarra Dragons' Facility***	logged by: ***CP***
location: ***7-9 Squires Way, Fairy Meadows***	checked by: ***AJB***

position: Not Specified | surface elevation: Not Specified | angle from horizontal: 90°

drill model: Geoprobe, Track mounted | drilling fluid: | hole diameter : 125 mm

drilling information						material substance						
method & support	penetration 1 2 3	water	samples & field tests	RL (m)	depth (m)	graphic log	soil group symbol	material description **SOIL NAME**: plasticity or particle characteristics, colour, secondary and minor components	moisture condition	consistency / relative density	hand penetrometer (kPa) 100 200 300 400	soil origin, structure and additional observations
HA			E					**TOPSOIL**.	M			**TOPSOIL**
								FILL: Gravelly CLAY: low to medium plasticity, dark brown, fine to medium grained, angular to sub-angular gravel, trace rootlets.				**FILL** PID: 0.6 ppm
			E		0.5			**CLAY**: low to medium plasticity, pale grey, mottled brown, trace rootlets.	>Wp	St		**ALLUVIAL** PID: 0.7 ppm
			E		1.0			**Sandy CLAY**: low to medium plasticity, pale grey, mottled red, fine to medium grained sand.				PID: 0.4 ppm
								Hand Auger HA/CPT18 terminated at 1.2 m Target depth				
					1.5							
					2.0							
					2.5							
					3.0							
					3.5							

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method
- DT diatube
- AD auger drilling*
- AS auger screwing*
- HA hand auger
- W washbore
- RR rock roller

* bit shown by suffix, e.g. AD/T
- B blank bit
- T TC bit
- V V bit

support
- M mud
- C casing
- N nil

penetration
1 2 3 — no resistance ranging to refusal

water
- 10-Oct-12 water level on date shown
- water inflow
- water outflow

samples & field tests
- B bulk disturbed sample
- D disturbed sample
- E environmental sample
- SS split spoon sample
- U## undisturbed sample ##mm diameter
- HP hand penetrometer (kPa)
- N standard penetration test (SPT)
- N* SPT - sample recovered
- Nc SPT with solid cone
- VS vane shear; peak/remouded (kPa)
- R refusal
- HB hammer bouncing

soil group symbol & material description
based on AS 1726:2017

moisture condition
- D dry
- M moist
- W wet
- Wp plastic limit
- Wl liquid limit

consistency / relative density
- VS very soft
- S soft
- F firm
- St stiff
- VSt very stiff
- H hard
- Fb friable
- VL very loose
- L loose
- MD medium dense
- D dense
- VD very dense

APPENDIX F: GROUNDWATER AND SUBSURFACE GAS MONITORING RECORDS

SURFACE WATER SAMPLING FORM A

PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON	Cameron Prentice	DATE	27/01/2022	SAMPLE ID	BH6
SITE NAME	BH6	METER TYPE	Geotech	METER ID		EQUIPMENT USED	Hydrasleeve	ORP REFERENCE ELECTRODE		WERE METALS FIELD FILTERED?	Y
HAS THIS FORM BEEN COMPLETED IN FULL?	Y	DUPLICATE COLLECTED?	N	DUPLICATE ID		TRIPLICATE COLLECTED?		TRIPLICATE ID			

TIME OF DAY	DO (mg/l)	DO change?	EC (uS)	EC change?	pH	pH change?	REDOX (mV)	Redox change?	TEMP. (°C)	Temp change?	CLARITY	COMMENTS
10:46	1.27		13927		6.63		-100.4		22.3		Cloudy	Pale grey, no odour
												Water level 0.54m
Stabilised	Stab. Count (10% range)	0	Stab. Count (3% range)	0	Stab. Count (0.1 unit)	0	Stab. Count (10mV)	0	Stab. Count (0.2 Degrees)	0		
Variance	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data		

SURFACE WATER SAMPLING FORM A

PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON	Cameron Prentice	DATE	27/01/2022	SAMPLE ID	BH7
SITE NAME	BH7	METER TYPE	Geotech	METER ID		EQUIPMENT USED	Hydrasleeve	ORP REFERENCE ELECTRODE		WERE METALS FIELD FILTERED?	Y
HAS THIS FORM BEEN COMPLETED IN FULL?	Y	DUPLICATE COLLECTED?	N	DUPLICATE ID		TRIPLICATE COLLECTED?		TRIPLICATE ID			

TIME OF DAY	DO (mg/l)	DO change?	EC (uS)	EC change?	pH	pH change?	REDOX (mV)	Redox change?	TEMP. (°C)	Temp change?	CLARITY	COMMENTS
11:20	1.81		2182		6.19		55.6		22.9		Very Cloudy	Pale brown, no odour
												Water level 1.89m
Stabilised	Stab. Count (10% range)	0	Stab. Count (3% range)	0	Stab. Count (0.1 unit)	0	Stab. Count (10mV)	0	Stab. Count (0.2 Degrees)	0		
Variance	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data		

SURFACE WATER SAMPLING FORM A

PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON	Cameron Prentice	DATE	27/01/2022	SAMPLE ID	BH8
SITE NAME	BH8	METER TYPE	Geotech	METER ID		EQUIPMENT USED		ORP REFERENCE ELECTRODE		WERE METALS FIELD FILTERED?	N
HAS THIS FORM BEEN COMPLETED IN FULL?	Y	DUPLICATE COLLECTED?	N	DUPLICATE ID		TRIPLICATE COLLECTED?		TRIPLICATE ID			

TIME OF DAY	DO (mg/l)	DO change?	EC (uS)	EC change?	pH	pH change?	REDOX (mV)	Redox change?	TEMP. (°C)	Temp change?	CLARITY	COMMENTS
10:30	1.26		12559		6.48		-106.1		22		Clear	Slightly cloudy, clear, no odour
												Water level. 0.62m
Stabilised	Stab. Count (10% range)	0	Stab. Count (3% range)	0	Stab. Count (0.1 unit)	0	Stab. Count (10mV)	0	Stab. Count (0.2 Degrees)	0		
Variance	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data		

SURFACE WATER SAMPLING FORM A

PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON	Cameron Prentice	DATE	27/01/2022	SAMPLE ID	BH9
SITE NAME	BH9	METER TYPE	Geotech	METER ID		EQUIPMENT USED		ORP REFERENCE ELECTRODE		WERE METALS FIELD FILTERED?	N
HAS THIS FORM BEEN COMPLETED IN FULL?	Y	DUPLICATE COLLECTED?	Y	DUPLICATE ID	DUP-1	TRIPLICATE COLLECTED?	Y	TRIPLICATE ID	TRIP-1		

TIME OF DAY	DO (mg/l)	DO change?	EC (uS)	EC change?	pH	pH change?	REDOX (mV)	Redox change?	TEMP. (°C)	Temp change?	CLARITY	COMMENTS
11:50	1.01		13720		5.46		67.9		20.6		Very Cloudy	Pale brown, mild organic odour
												Water level 1.84m
Stabilised	Stab. Count (10% range)	0	Stab. Count (3% range)	0	Stab. Count (0.1 unit)	0	Stab. Count (10mV)	0	Stab. Count (0.2 Degrees)	0		
Variance	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data		

SURFACE WATER SAMPLING FORM A

PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON	Cameron Prentice	DATE	27/01/2022	SAMPLE ID	BH10
SITE NAME	BH10	METER TYPE	Geotech	METER ID		EQUIPMENT USED		ORP REFERENCE ELECTRODE		WERE METALS FIELD FILTERED?	N
HAS THIS FORM BEEN COMPLETED IN FULL?	Y	DUPLICATE COLLECTED?	N	DUPLICATE ID		TRIPLICATE COLLECTED?		TRIPLICATE ID			

TIME OF DAY	DO (mg/l)	DO change?	EC (uS)	EC change?	pH	pH change?	REDOX (mV)	Redox change?	TEMP. (°C)	Temp change?	CLARITY	COMMENTS
12:30	2.73		9823		5.79		-0.1		22.4		Very Cloudy	Dark brown no odour
												Water level 1.18m
Stabilised	Stab. Count (10% range)	0	Stab. Count (3% range)	0	Stab. Count (0.1 unit)	0	Stab. Count (10mV)	0	Stab. Count (0.2 Degrees)	0		
Variance	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data	Variance (%)	No data		

LANDFILL GAS BORE MONITORING LOG						
PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON
SITE NAME	Innovation campus	BOREHOLE ID	BH2	ATMOSPHERIC PRESSURE (mBa)	1012	GAS FLOW (l/hr)

TIME (seconds)	METHANE (%v/v)	CARBON DIOXIDE (%v/v)	OXYGEN (%v/v)	CO (ppm)	H_2S (ppm)	
10	0	0.1	20.1	0	0	Water level 0.48m
30	0	0.1	20.2	0	0	
60	0	0.1	20.3	0	0	
120	0	0.1	20.3	0	0	
180	0	0.1	20.2	0	0	

	DATE	27/01/2022	TIME	12:50 PM
0.1	BOREHOLE PRESSURE (mb)	0	SAMPLE ID	BH2

NOTES

LANDFILL GAS BORE MONITORING LOG						
PROJECT NAME	St Geogre Illawarra Dragons	PROJECT NUMBER	754-SYDGE295047	PROJECT MANAGER	Delfa Sarabia	FIELD PERSON
SITE NAME	Innovation campus	BOREHOLE ID	BH3	ATMOSPHERIC PRESSURE (mBa)	1012	GAS FLOW (l/hr)

TIME (seconds)	METHANE (%v/v)	CARBON DIOXIDE (%v/v)	OXYGEN (%v/v)	CO (ppm)	H_2S (ppm)	
10	0	24.5	2.8	0	0	Water level 1.49m
30	0	24.4	2.9	0	0	
60	0	23.9	3.3	0	0	
120	0	21.2	5.3	0	0	
180	0	19.8	6.4	0	0	

	DATE	27/01/2022	TIME	1:00 PM
0	BOREHOLE PRESSURE (mb)	0	SAMPLE ID	BH3

NOTES

APPENDIX G: LABORATORY RESULTS

			Asbestos		BTEX						Inorganics		Metals								TRH (NEPM 2013 Fractions)							TRH (NEPM 1999 Fractions)					
			Approximate Sample Mass	Asbestos detected	Benzene	Ethylbenzene	Toluene	Xylene (m & p)	Xylene (o)	Xylene Total	Moisture Content (dried @ 103°C)	pH (aqueous extract)	Arsenic	Cadmium	Chromium	Copper	Lead	Mercury	Nickel	Zinc	F1: C6 - C10	F1: C6-C10 less BTEX	F2: C10-C16	F2: C10-C16 less naphthalene	F3: C16-C34	F4: C34-C40	C10 - C40 (Sum of total)	C6 - C9	C10 - C14	C15 - C28	C29 - C36	C10 - C36 (Sum of total)
			g	Comment	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	%	pH_Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL					0.1	0.1	0.1	0.2	0.1	0.3	1	0.1	2	0.4	2	5	5	0.1	2	5	10	10	50	50	100	100	50	10	20	50	50	50
CRC CARE, Direct Contact HSL-D					430	27000	99000			81000												26000	20000		27000	38000						
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay					4																											
NEPM 2013 HILs Recreational C Soil													300	90		17000	600	80	1200	30000												
PFAS NEMP 2020 Public open space (HIL C)																																
NEPM 2013 ESLs Urban residential and public open space, Fine Soil					65	125	105			45											180		120		1300	5600						
NEPM 2013 EILs Urban residential and open public spaces (Aged)													100				1100															
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																					800		1000		5000	10000						
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																					800		1000		3500	10000						
Field ID	**Location**	**Sample Depth**	**Sample Date**																														
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	16	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	19	6.1	30	0.4	17	51	61	0.1	15	430	<20	<20	<50	<50	150	<100	150	<20	<20	87	96	183
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	22	-	4	<0.4	28	33	13	<0.1	11	31	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	196	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	16	-	<2	<0.4	6	13	19	<0.1	<5	40	<20	<20	66	66	230	<100	296	<20	71	170	110	351
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	13	-	4.9	<0.4	21	14	10	<0.1	5.2	16	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	34	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	34	-	7.5	<0.4	26	31	38	<0.1	28	66	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50 - 52	<50	<120 - 52
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	22	-	4.8 - 7.1	<0.4	36 - 39	32 - 34	14 - 16	<0.1	8.1 - 9.2	25 - 29	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	188	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	24	-	5.5	<0.4	7.6	24	25	<0.1	14	82	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	26	-	6	<0.4	22	31	16	<0.1	9.2	28	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH3_3-3.45	BH3	3-3.45	11/01/2022	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	19	-	4.4	<0.4	21	32	14	<0.1	11	23	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	132	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	23	-	<2	0.8	12	<5	4000	0.5	<5	3400	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	3	<0.4	9.5	13	18	<0.1	5.5	45	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	49	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	72	6.1 - 6.2	8.8	<0.4	27	37	41	<0.1	13	120	34	34	<50	<50	<100	<100	<100	<20	<20	<50	<50 - 55	<120 - 55
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	24	-	6.1	<0.4	30	25	15	<0.1	10	32	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	25	-	10	<0.4	45	30	17	<0.1	36	49	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	29	5.8	5	<0.4	25	50	24	<0.1	28	48	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	22	-	5.1	<0.4	34	19	14	<0.1	10	19	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	84	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	25	-	5.5 - 7.7	<0.4	15 - 21	11 - 14	15 - 16	<0.1	5.1 - 5.3	33 - 35	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	28	-	4.4 - 7.9	<0.4	32 - 37	22 - 32	12 - 13	<0.1	14 - 15	30 - 37	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	80	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	19	-	5.2	<0.4	28	25	27	<0.1	13	100	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	<2	<0.4	17	8.2	7.8	<0.1	6.3	12	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	102	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	16	-	4.4	<0.4	13	15	23	<0.1	14	39	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	59	59
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	29	-	12	<0.4	63	42	21	<0.1	14	35	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	146	ND	<0.1	<0.1	<0.1	0.3	0.3	0.6	22	-	15	<0.4	23	26	68	<0.1	24	120	<20	<20	<50	<50	120	<100	120	<20	<20	68	74	142
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	83	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	7.4	4.2	<0.4	16	20	19	0.3	15	47	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	25	-	6.1	<0.4	16	14	18	<0.1	13	13	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	19	-	14	<0.4	20	32	16	<0.1	<5	64	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	4.3	<0.4	13	8.5	12	<0.1	5.8	18	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	8.3	-	2.9	<0.4	8.8	26	7	<0.1	<5	26	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	3.2	<0.4	<5	16	8.9	<0.1	<5	56	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	3.4	<0.4	22	18	11	<0.1	<5	13	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	139	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	10	8.2	<2	<0.4	17	9.1	6.1	<0.1	<5	9.2	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	7.6	<0.4	22	21	25	<0.1	13	75	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	4.1	<0.4	15	11	13	<0.1	10	22	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	28	-	6.8	<0.4	32	19	11	<0.1	7.7	20	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	116	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	16	-	5.8	<0.4	27	21	24	<0.1	19	54	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	26	-	3.9	<0.4	13	77	61	<0.1	7.5	75	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	79	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	3.5	<0.4	19	7.8	11	<0.1	8.4	13	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	75	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	20	-	8.9	<0.4	27	66	35	<0.1	25	96	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	107	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	8.6	<0.4	31	29	46	<0.1	31	64	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	87	ND	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	22	-	7.6	<0.4	28	24	28	<0.1	17	63	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	3.6	<0.4	19	15	8.4	<0.1	6	15	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
DUP1	CPT2	0.4-0.5	8/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	26	-	2.6	<0.4	33	18	13	<0.1	9.8	19	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
DUP2	CPT15	1.1-1.2	9/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	18	-	3.4	<0.4	34	17	8.5	<0.1	5.6	12	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
DUP3	BH6	1.9-2.0	16/12/2021	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	27	-	4.1	<0.4	31	22	12	<0.1	9.3	21	<20	<20	<50	<50	<100	<100	<100	<20	<20	<50	<50	<50
DUP4	BH10	0.1-0.2	14/01/2022	-	-	<0.1	<0.1	<0.1	<0.2	<0.1	<0.3	17	-	2.4	<0.4	7.2	19	24	<0.1	<5	72	<20	<20	<50	<50	160	<100	160	<20	31	100	93	224
Trip 1	CPT2	0.4-0.5	8/12/2021	26.4	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	<5	<1	22	13	12	<0.1	7	14	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50
Trip 3	BH6	1.9-2.0	16/12/2021	23.3	-	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	-	-	6	<1	46	26	12	<0.1	9	18	<10	<10	<50	<50	<100	<100	<50	<10	<50	<100	<100	<50

				OCP																						
				4,4-DDE	a-BHC	Aldrin	Aldrin + Dieldrin	b-BHC	Chlordane	d-BHC	DDD	DDT	DDT+DDE+DDD	Dieldrin	Endosulfan I	Endosulfan II	Endosulfan sulphate	Endrin	Endrin aldehyde	Endrin ketone	g-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Hexachlorobenzene	Methoxychlor	Toxaphene	Vic EPA IWRG 621 OCP (Total)*	Vic EPA IWRG 621 Other OCP (Total)*
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG
EQL				0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.5	0.1	0.1
CRC CARE, Direct Contact HSL-D																												
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay																												
NEPM 2013 HILs Recreational C Soil							10		70				400					20				10		10	400	30		
PFAS NEMP 2020 Public open space (HIL C)																												
NEPM 2013 ESLs Urban residential and public open space, Fine Soil																												
NEPM 2013 EILs Urban residential and open public spaces (Aged)												180																
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																												
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																												
Field ID	**Location**	**Sample Depth**	**Sample Date**																									
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH3_3-3.45	BH3	3-3.45	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05 - 0.07	<0.05	<0.05	<0.05	<0.05 - 0.07	<0.05	<0.05	<0.05	<0.05	<0.05	0.82	<0.5	0.96	0.96
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP1	CPT2	0.4-0.5	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
DUP2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP4	BH10	0.1-0.2	14/01/2022	<0.05	<0.05	<0.05	<0.05	<0.05	<0.1	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.5	<0.1	<0.1
Trip 1	CPT2	0.4-0.5	8/12/2021	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.2	-	-	-
Trip 3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

				OPP																								
				Azinophos methyl	Bolstar (Sulprofos)	Chlorfenvinphos	Chlorpyrifos	Chlorpyrifos-methyl	Coumaphos	Demeton-O	Demeton-S	Diazinon	Dichlorvos	Dimethoate	Disulfoton	Ethion	Ethoprop	EPN	Fenitrothion	Fensulfothion	Fenthion	Malathion	Merphos	Methyl parathion	Mevinphos (Phosdrin)	Monocrotophos	Naled (Dibrom)	Omethoate	Parathion
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.05	0.2	0.05	0.05	0.05	2	0.2	0.2	0.05	0.05	0.05	0.2	0.05	0.2	0.2	0.2	0.2	0.2	0.05	0.05	0.2	0.2	0.2	0.2	0.2	2	0.2
CRC CARE, Direct Contact HSL-D																														
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay																														
NEPM 2013 HILs Recreational C Soil							250																							
PFAS NEMP 2020 Public open space (HIL C)																														
NEPM 2013 ESLs Urban residential and public open space, Fine Soil																														
NEPM 2013 EILs Urban residential and open public spaces (Aged)																														
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																														
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																														
Field ID	**Location**	**Sample Depth**	**Sample Date**																											
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH3_3-3.45	BH3	3-3.45	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP1	CPT2	0.4-0.5	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
DUP2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP4	BH10	0.1-0.2	14/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<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	<2	<0.2	<2	<0.2
Trip 1	CPT2	0.4-0.5	8/12/2021	<0.05	-	<0.05	<0.05	<0.05	-	-	-	<0.05	<0.05	<0.05	-	<0.05	-	-	-	-	<0.05	<0.05	-	<0.2	-	<0.2	-	-	<0.2
Trip 3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

				OPP							Polychlorinated Biphenyls							
				Phorate	Pirimiphos-methyl	Pyrazophos	Ronnel	Terbufos	Trichloronate	Tetrachlorvinphos	Tokuthion	Arochlor 1221	Aroclor 1016	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	PCBs (Sum of total)
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
CRC CARE, Direct Contact HSL-D																			
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay																			
NEPM 2013 HILs Recreational C Soil																			1
PFAS NEMP 2020 Public open space (HIL C)																			
NEPM 2013 ESLs Urban residential and public open space, Fine Soil																			
NEPM 2013 EILs Urban residential and open public spaces (Aged)																			
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																			
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																			
Field ID	**Location**	**Sample Depth**	**Sample Date**																
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH3_3-3.45	BH3	3-3.45	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP1	CPT2	0.4-0.5	8/12/2021	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
DUP2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP4	BH10	0.1-0.2	14/01/2022	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Trip 1	CPT2	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	<0.1
Trip 3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

				PAH																		
				Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(a)pyrene TEQ (lower bound) *	Benzo(a)pyrene TEQ (medium bound) *	Benzo(a)pyrene TEQ (upper bound) *	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Benzo[b+j]fluoranthene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-c,d)pyrene	Naphthalene	Phenanthrene	Pyrene	Total PAHs
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	MG/KG	MG/KG	MG/KG	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
EQL				0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CRC CARE, Direct Contact HSL-D																				11000			
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay																							
NEPM 2013 HILs Recreational C Soil																							300
PFAS NEMP 2020 Public open space (HIL C)																							
NEPM 2013 ESLs Urban residential and public open space, Fine Soil								0.7															
NEPM 2013 EILs Urban residential and open public spaces (Aged)																				170			
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																							
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																							
Field ID	**Location**	**Sample Depth**	**Sample Date**																				
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.7	<0.5	0.7
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH3_3-3.45	BH3	3-3.45	11/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DUP1	CPT2	0.4-0.5	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DUP2	CPT15	1.1-1.2	9/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DUP3	BH6	1.9-2.0	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
DUP4	BH10	0.1-0.2	14/01/2022	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trip 1	CPT2	0.4-0.5	8/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Trip 3	BH6	1.9-2.0	16/12/2021	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	1.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

				PFAS																																
				1H,1H,2H,2H-perfluorodecanesulfonic acid	1H,1H,2H,2H-perfluorohexanesulfonic acid	N-ethyl-perfluorooctanesulfonamidoacetic acid	N-methyl-perfluorooctanesulfonamidoacetic acid	Perfluorobutanesulfonic acid	Perfluorobutanoic acid	Perfluorodecanesulfonic acid	Perfluorodecanoic acid	Perfluorododecanoic acid	Perfluorooctanoate Acid	Perfluoroheptanoic acid	Perfluorohexanesulfonic acid	Perfluorohexanoic acid	Perfluorononanoic acid	Perfluorooctanesulfonamide	Perfluorooctanesulfonic acid	Perfluoropentanoic acid	Perfluorotetradecanoic acid	Perfluorotridecanoic acid	Perfluoroundecanoic acid	6:2 Fluorotelomer Sulfonate (6:2 FtS)	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	Perfluoroheptanesulfonic acid (PFHpS)	Perfluoropentanesulfonic acid (PFPeS)	Perfluoropropanesulfonic acid (PFPrS)	Sum (PFHxS + PFOS)*	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	Sum of PFASs (n=30)*	Sum of US EPA PFAS (PFOS + PFOA)*	Sum of WA DWER PFAS (n=10)*	N,N-Dimethylformamide
				mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	mg/kg
EQL				0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01	0.005	5	5	5	5	5	50	5	10	0.01
CRC CARE, Direct Contact HSL-D																																				
NEPM 2013 Commercial/Industrial D Soil HSL for Vapour Intrusion, 0 to <1m, Clay																																				
NEPM 2013 HILs Recreational C Soil																																				
PFAS NEMP 2020 Public open space (HIL C)													10																							
NEPM 2013 ESLs Urban residential and public open space, Fine Soil																																				
NEPM 2013 EILs Urban residential and open public spaces (Aged)																																				
NEPM 2013 Mgmt Limits Commercial and industrial, Fine Soil																																				
NEPM 2013 Mgmt Limits Residential, parkland and public open space, Fine Soil																																				
Field ID	**Location**	**Sample Depth**	**Sample Date**																																	
BH01_0.0-0.1	BH01	0-0.1	7/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH01_1.5-1.6	BH01	1.5-1.6	7/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.1-0.2	BH10	0.1-0.2	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH10_0.9-1.0	BH10	0.9-1	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH2_0.1-0.2	BH2	0.1-0.2	15/12/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<5	<5	<5	<5	<5	<50	<5	<10	<0.01
BH2_0.9-1.0	BH2	0.9-1	15/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_0.1-0.2	BH3	0.1-0.2	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_0.9-1.0	BH3	0.9-1	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH3_3-3.45	BH3	3-3.45	11/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4_0.1-0.2	BH4	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH4_0.9-1.0	BH4	0.9-1	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_0.1-0.2	BH5	0.1-0.2	13/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_0.9-1.0	BH5	0.9-1	13/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH5_3.0-3.1	BH5	3-3.1	13/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6_0.4-0.5	BH6	0.4-0.5	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH6_1.9-2.0	BH6	1.9-2	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8_0.1-0.2	BH8	0.1-0.2	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
BH8_0.9-1.0	BH8	0.9-1	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT1_0.1-0.2	CPT1	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT1_1.1-1.2	CPT1	1.1-1.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT10_0.1-0.2	CPT10	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT10_0.4-0.5	CPT10	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT11_0.1-0.2	CPT11	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT12_0.1-0.2	CPT12	0.1-0.2	9/12/2021	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<5	<5	<5	<5	<5	<50	<5	<10	<0.01
CPT13_0.1-0.2	CPT13	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT13_1.1-1.2	CPT13	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT14_0.1-0.2	CPT14	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_0.1-0.2	CPT15	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT15_1.1-1.2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT16_0.1-0.2	CPT16	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT17_0.1-0.2	CPT17	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT18_0.1-0.2	CPT18	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT18_1.1-1.2	CPT18	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT2_0.4-0.5	CPT2	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT3_0.1-0.2	CPT3	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT4_0.1-0.2	CPT4	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT5_0.1-0.2	CPT5	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT6_0.1-0.2	CPT6	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT7_0.1-0.2	CPT7	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT8_0.1-0.2	CPT8	0.1-0.2	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
CPT9_0.1-0.2	CPT9	0.1-0.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP1	CPT2	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP2	CPT15	1.1-1.2	9/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
DUP4	BH10	0.1-0.2	14/01/2022	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip 1	CPT2	0.4-0.5	8/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trip 3	BH6	1.9-2.0	16/12/2021	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

										Field ID	BH10	BH6	BH7	BH8	BH9	DUP-1
										Sample Date	27/01/2022	27/01/2022	27/01/2022	27/01/2022	27/01/2022	27/01/2022
				ANZG (2018) Marine water 95% toxicant DGVs	NHMRC 2008 Recreational Water	PFAS NEMP 2020 Interim Marine 95%	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay			Primary sample	Primary sample	Primary sample	Primary sample	Primary sample	Duplicate of BH9
Chemical Group	**Chemical Name**	**output unit**	**EQL**				2-4m	4-8m	>8m						
Polycyclic Aromatic Hydrocarbons	Acenaphthene	µg/L	1							<1	<1	<1	<1	<2	<2
	Acenaphthylene	µg/L	1							<1	<1	<1	<1	<2	<2
	Anthracene	µg/L	1							<1	<1	<1	<1	<2	<2
	Benz(a)anthracene	µg/L	1							<1	<1	<1	<1	<1	<1
	Benzo(g,h,i)perylene	µg/L	1							<1	<1	<1	<1	<1	<1
	Benzo(k)fluoranthene	µg/L	1							<1	<1	<1	<1	<1	<1
	Chrysene	µg/L	1							<1	<1	<1	<1	<1	<1
	Benzo(b+j)fluoranthene	mg/L	0.001							<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
	Dibenz(a,h)anthracene	µg/L	1							<1	<1	<1	<1	<1	<1
	Fluoranthene	µg/L	1							<1	<1	<1	<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/L	1							<1	<1	<1	<1	<1	<1
	Phenanthrene	µg/L	1							<1	<1	<1	<1	<2	<2
	Pyrene	µg/L	1							<1	<1	<1	<1	<1	<1
	PAHs (Sum of total)	µg/L	1							<1	<1	<1	<1	<2	<2
	Benzo(a) pyrene	µg/L	1							<1	<1	<1	<1	<1	<1
	Fluorene	µg/L	1							<1	<1	<1	<1	<2	<2
	Naphthalene	µg/L	1	70			NL	NL	NL	<1	<1	<1	<1	<2	<2
Metals	Arsenic	mg/L	0.001		0.07					0.011	0.002	0.012	0.002	0.004	0.003
	Cadmium	mg/L	0.0002	0.0055	0.02					<0.0002	<0.0002	<0.0002	<0.0002	<0.0002	<0.0002
	Lead	mg/L	0.001	0.0044	0.1					0.019	0.003	0.021	<0.001	0.006	0.005
	Mercury	mg/L	0.0001	0.0004	0.01					<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Nickel	mg/L	0.001	0.07	0.2					0.059	<0.001	0.035	0.007	0.047	0.04
	Copper	mg/L	0.001	0.0013	20					0.087	0.011	0.042	0.003	0.014	0.01
	Zinc	mg/L	0.005	0.015						0.11	0.011	0.075	0.011	0.17	0.14
	Chromium (III+VI)	mg/L	0.001		0.5					0.046	0.005	0.041	0.002	0.015	0.011
BTEX	Benzene	µg/L	1	700	10		30000	30000	35000	<1	<1	<1	<1	<1	<1
	Toluene	µg/L	1		8000		NL	NL	NL	<1	<1	<1	<1	<1	<1
	Ethylbenzene	µg/L	1		3000		NL	NL	NL	<1	<1	<1	<1	<1	<1
	Xylene (o)	µg/L	1							<1	<1	<1	<1	<1	<1
	Xylene (m & p)	µg/L	2							<2	<2	<2	<2	<2	<2
	Xylene Total	µg/L	3		6000		NL	NL	NL	<3	<3	<3	<3	<3	<3
TRH (NEPM 1999 Fractions)	C6 - C9	µg/L	20							<20	<20	<20	<20	<20	<20
	C10 - C14	µg/L	50							<50	<50	<50	80	<50	<50
	C15 - C28	µg/L	100							<100	800	200	400	<100	100
	C29 - C36	µg/L	100							<100	<100	<100	<100	<100	<100
	C10 - C36 (Sum of total)	µg/L	100							<100	800	200	480	<100	100
TRH (NEPM 2013 Fractions)	F1 (C6 - C10)	µg/L	20							<20	<20	<20	<20	<20	<20
	F1 (C6 - C10) less BTEX	µg/L	20				NL	NL	NL	<20	<20	<20	<20	<20	<20
	F2 (C10 - C16)	µg/L	50							<50	<50	<50	80	<50	<50
	F2 C10 - C16 (minus Naphthalene)	µg/L	50				NL	NL	NL	<50	<50	<50	80	<50	<50
	F3 (C16 - C34)	µg/L	100							<100	900	300	500	<100	200
	F4 (C34 - C40)	µg/L	100							<100	<100	<100	<100	<100	<100
	C10 - C40 (Sum of total)	µg/L	100							<100	900	300	580	<100	200

										Field ID	BH10	BH6	BH7	BH8	BH9	DUP-1
										Sample Date	27/01/2022	27/01/2022	27/01/2022	27/01/2022	27/01/2022	27/01/2022
				ANZG (2018) Marine water 95% toxicant DGVs	NHMRC 2008 Recreational Water	PFAS NEMP 2020 Interim Marine 95%	NEPM 2013 Table 1A(4) Comm/Ind HSL D GW for Vapour Intrusion, Clay				Primary sample	Primary sample	Primary sample	Primary sample	Primary sample	Duplicate of BH9
Chemical Group	**Chemical Name**	**output unit**	**EQL**				2-4m	4-8m	>8m							
Per and polyfluoroalkyl substances	Perfluorobutane sulfonic acid (PFBS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluoropentane sulfonic acid (PFPeS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorohexane sulfonic acid (PFHxS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluoroheptane sulfonic acid (PFHpS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorooctanesulfonic acid (PFOS)	mg/L	0.00001			0.00013					<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorodecane sulfonic acid (PFDS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorobutanoic acid (PFBA)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	Perfluoropentanoic acid (PFPeA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorohexanoic acid (PFHxA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluoropropanesulfonic acid (PFPrS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorononanesulfonic acid (PFNS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluoroheptanoic acid (PFHpA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorooctanoic acid (PFOA)	mg/L	0.00001			0.22					<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorononanoic acid (PFNA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	Perfluorodecanoic acid (PFDA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluoroundecanoic acid (PFUnDA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorododecanoic acid (PFDoDA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorotridecanoic acid (PFTrDA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorotetradecanoic acid (PFTeDA)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Perfluorooctane sulfonamide (PFOSA)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/L	0.00005								<0.00005	<0.00005	<0.00005	<0.00005	<0.00005	<0.00005
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Sum (PFHxS + PFOS)	mg/L	0.00001								<0.00001	<0.00001	<0.00001	<0.00001	<0.00001	<0.00001
	Sum of PFASs (n=28)	mg/L	0.0001								<0.0001	<0.0001	<0.0001	<0.0001	<0.0001	<0.0001
	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01								<0.01	<0.01	<0.01	<0.01	<0.01	<0.01
	Sum of PFAS (WA DER List)_	µg/L	0.05								<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
	Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01								<0.01	<0.01	<0.01	<0.01	<0.01	<0.01

			SDG	17-Dec-21	17-Dec-21		9-Dec-21	9-Dec-21		
			Field ID	BH6_1.9-2.0	DUP3	**RPD**	CPT2_0.4-0.5	DUP1	**RPD**
			Sampled Date/Time	16/12/2021	16/12/2021	(%)	8/12/2021	8/12/2021	(%)
Chemical Group	**Chemical Name**	**Units**	**EQL**						
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Ethylbenzene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Xylene (m & p)	mg/kg	0.2 (Primary): 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0
	Xylene (o)	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Xylene Total	mg/kg	0.3 (Primary): 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0
Inorganics	Moisture Content (dried @ 103°C)	%	1	22.0	27.0	20	28.0	26.0	7
Metals	Arsenic	mg/kg	2 (Primary): 5 (Interlab)	5.1	4.1	22	6.8	2.6	89
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium	mg/kg	5 (Primary): 2 (Interlab)	34.0	31.0	9	32.0	33.0	3
	Copper	mg/kg	5	19.0	22.0	15	19.0	18.0	5
	Lead	mg/kg	5	14.0	12.0	15	11.0	13.0	17
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 (Primary): 2 (Interlab)	10.0	9.3	7	7.7	9.8	24
	Zinc	mg/kg	5	19.0	21.0	10	20.0	19.0	5
OCP	4,4-DDE	mg/kg	0.05				<0.05	<0.05	0
	a-BHC	mg/kg	0.05				<0.05	<0.05	0
	Aldrin	mg/kg	0.05				<0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	b-BHC	mg/kg	0.05				<0.05	<0.05	0
	Chlordane	mg/kg	0.1 (Primary): 0.05 (Interlab)				<0.1	<0.1	0
	d-BHC	mg/kg	0.05				<0.05	<0.05	0
	DDD	mg/kg	0.05				<0.05	<0.05	0
	DDT	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.05	0
	DDT+DDE+DDD	mg/kg	0.05				<0.05	<0.05	0
	Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan I	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan II	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan sulphate	mg/kg	0.05				<0.05	<0.05	0
	Endrin	mg/kg	0.05				<0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05				<0.05	<0.05	0
	Endrin ketone	mg/kg	0.05				<0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05				<0.05	<0.05	0
	Hexachlorobenzene	mg/kg	0.05				<0.05	<0.05	0
	Methoxychlor	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.05	0
	Toxaphene	mg/kg	0.5				<0.5	<0.5	0
	Vic EPA IWRG 621 OCP (Total)*	mg/kg	0.1				<0.1	<0.1	0
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg	0.1				<0.1	<0.1	0
OPP	Azinophos methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Bolstar (Sulprofos)	mg/kg	0.2				<0.2	<0.2	0
	Chlorfenvinphos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Chlorpyrifos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Chlorpyrifos-methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Coumaphos	mg/kg	2				<2.0	<2.0	0
	Demeton-O	mg/kg	0.2				<0.2	<0.2	0
	Demeton-S	mg/kg	0.2				<0.2	<0.2	0
	Diazinon	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Dichlorvos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Dimethoate	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Disulfoton	mg/kg	0.2				<0.2	<0.2	0
	Ethion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Ethoprop	mg/kg	0.2				<0.2	<0.2	0
	Fenitrothion	mg/kg	0.2				<0.2	<0.2	0
	Fensulfothion	mg/kg	0.2				<0.2	<0.2	0
	Fenthion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Malathion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Merphos	mg/kg	0.2				<0.2	<0.2	0
	Methyl parathion	mg/kg	0.2				<0.2	<0.2	0
	Mevinphos (Phosdrin)	mg/kg	0.2				<0.2	<0.2	0
	Monocrotophos	mg/kg	2 (Primary): 0.2 (Interlab)				<2.0	<2.0	0
	Naled (Dibrom)	mg/kg	0.2				<0.2	<0.2	0
	Omethoate	mg/kg	2				<2.0	<2.0	0
	Parathion	mg/kg	0.2				<0.2	<0.2	0
	Phorate	mg/kg	0.2				<0.2	<0.2	0
	Pyrazophos	mg/kg	0.2				<0.2	<0.2	0
	Ronnel	mg/kg	0.2				<0.2	<0.2	0
	Terbufos	mg/kg	0.2				<0.2	<0.2	0
	Trichloronate	mg/kg	0.2				<0.2	<0.2	0
	Tetrachlorvinphos	mg/kg	0.2				<0.2	<0.2	0
	Tokuthion	mg/kg	0.2				<0.2	<0.2	0

	SDG	17-Dec-21	17-Dec-21		9-Dec-21	9-Dec-21	
	Field ID	BH6_1.9-2.0	DUP3	RPD	CPT2_0.4-0.5	DUP1	RPD
	Sampled Date/Time	16/12/2021	16/12/2021	(%)	8/12/2021	8/12/2021	(%)
Chemical Group	Chemical Name	Units	EQL						
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Total PAHs	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Pesticides	Pirimiphos-methyl	mg/kg	0.2				<0.2	<0.2	0
Polychlorinated Biphenyls	Arochlor 1221	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1016	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1232	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1242	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1248	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1254	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1260	mg/kg	0.1				<0.1	<0.1	0
	PCBs (Sum of total)	mg/kg	0.1				<0.1	<0.1	0
SVOCs	EPN	mg/kg	0.2				<0.2	<0.2	0
TRH (NEPM 1999 Fractions)	C10 - C14	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
	C10 - C36 (Sum of total)	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	C15 - C28	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	<50.0	<50.0	0
	C29 - C36	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	<50.0	<50.0	0
	C6 - C9	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
TRH (NEPM 2013 Fractions)	F1: C6 - C10	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
	F1: C6-C10 less BTEX	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
	F2: C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	F2: C10-C16 less naphthalene	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	F3: C16-C34	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	F4C34-C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	C10 - C40 (Sum of total)	mg/kg	100 (Primary): 50 (Interlab)	<100.0	<100.0	0	<100.0	<100.0	0

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (5-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

	SDG	13-Dec-21	13-Dec-21		17-Jan-22	17-Jan-22	
	Field ID	CPT15_1.1-1.2	DUP2	RPD	BH10_0.1-0.2	DUP4	RPD
	Sampled Date/Time	9/12/2021	9/12/2021	(%)	14/01/2022	14/01/2022	(%)
Chemical Group	Chemical Name	Units	EQL						
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Ethylbenzene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Xylene (m & p)	mg/kg	0.2 (Primary): 0.5 (Interlab)	<0.2	<0.2	0	<0.2	<0.2	0
	Xylene (o)	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.1	0	<0.1	<0.1	0
	Xylene Total	mg/kg	0.3 (Primary): 0.5 (Interlab)	<0.3	<0.3	0	<0.3	<0.3	0
Inorganics	Moisture Content (dried @ 103°C)	%	1	17.0	18.0	6	16.0	17.0	6
Metals	Arsenic	mg/kg	2 (Primary): 5 (Interlab)	3.2	3.4	6	<2.0	2.4	18
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<0.4	0	<0.4	<0.4	0
	Chromium	mg/kg	5 (Primary): 2 (Interlab)	**<5.0**	**34.0**	**149**	6.0	7.2	18
	Copper	mg/kg	5	16.0	17.0	6	13.0	19.0	38
	Lead	mg/kg	5	8.9	8.5	5	19.0	24.0	23
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 (Primary): 2 (Interlab)	<5.0	5.6	11	<5.0	<5.0	0
	Zinc	mg/kg	5	**56.0**	**12.0**	**129**	**40.0**	**72.0**	**57**
OCP	4,4-DDE	mg/kg	0.05				<0.05	<0.05	0
	a-BHC	mg/kg	0.05				<0.05	<0.05	0
	Aldrin	mg/kg	0.05				<0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	b-BHC	mg/kg	0.05				<0.05	<0.05	0
	Chlordane	mg/kg	0.1 (Primary): 0.05 (Interlab)				<0.1	<0.1	0
	d-BHC	mg/kg	0.05				<0.05	<0.05	0
	DDD	mg/kg	0.05				<0.05	<0.05	0
	DDT	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.05	0
	DDT+DDE+DDD	mg/kg	0.05				<0.05	<0.05	0
	Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan I	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan II	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan sulphate	mg/kg	0.05				<0.05	<0.05	0
	Endrin	mg/kg	0.05				<0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05				<0.05	<0.05	0
	Endrin ketone	mg/kg	0.05				<0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05				<0.05	<0.05	0
	Hexachlorobenzene	mg/kg	0.05				<0.05	<0.05	0
	Methoxychlor	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.05	0
	Toxaphene	mg/kg	0.5				<0.5	<0.5	0
	Vic EPA IWRG 621 OCP (Total)*	mg/kg	0.1				<0.1	<0.1	0
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg	0.1				<0.1	<0.1	0
OPP	Azinophos methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Bolstar (Sulprofos)	mg/kg	0.2				<0.2	<0.2	0
	Chlorfenvinphos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Chlorpyrifos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Chlorpyrifos-methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Coumaphos	mg/kg	2				<2.0	<2.0	0
	Demeton-O	mg/kg	0.2				<0.2	<0.2	0
	Demeton-S	mg/kg	0.2				<0.2	<0.2	0
	Diazinon	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Dichlorvos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Dimethoate	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Disulfoton	mg/kg	0.2				<0.2	<0.2	0
	Ethion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Ethoprop	mg/kg	0.2				<0.2	<0.2	0
	Fenitrothion	mg/kg	0.2				<0.2	<0.2	0
	Fensulfothion	mg/kg	0.2				<0.2	<0.2	0
	Fenthion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Malathion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.2	0
	Merphos	mg/kg	0.2				<0.2	<0.2	0
	Methyl parathion	mg/kg	0.2				<0.2	<0.2	0
	Mevinphos (Phosdrin)	mg/kg	0.2				<0.2	<0.2	0
	Monocrotophos	mg/kg	2 (Primary): 0.2 (Interlab)				<2.0	<2.0	0
	Naled (Dibrom)	mg/kg	0.2				<0.2	<0.2	0
	Omethoate	mg/kg	2				<2.0	<2.0	0
	Parathion	mg/kg	0.2				<0.2	<0.2	0
	Phorate	mg/kg	0.2				<0.2	<0.2	0
	Pyrazophos	mg/kg	0.2				<0.2	<0.2	0
	Ronnel	mg/kg	0.2				<0.2	<0.2	0
	Terbufos	mg/kg	0.2				<0.2	<0.2	0
	Trichloronate	mg/kg	0.2				<0.2	<0.2	0
	Tetrachlorvinphos	mg/kg	0.2				<0.2	<0.2	0
	Tokuthion	mg/kg	0.2				<0.2	<0.2	0

	SDG	13-Dec-21	13-Dec-21		17-Jan-22	17-Jan-22	
	Field ID	CPT15_1.1-1.2	DUP2	RPD	BH10_0.1-0.2	DUP4	RPD
	Sampled Date/Time	9/12/2021	9/12/2021	(%)	14/01/2022	14/01/2022	(%)
Chemical Group	Chemical Name	Units	EQL						
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Total PAHs	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Pesticides	Pirimiphos-methyl	mg/kg	0.2				<0.2	<0.2	0
Polychlorinated Biphenyls	Arochlor 1221	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1016	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1232	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1242	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1248	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1254	mg/kg	0.1				<0.1	<0.1	0
	Aroclor 1260	mg/kg	0.1				<0.1	<0.1	0
	PCBs (Sum of total)	mg/kg	0.1				<0.1	<0.1	0
SVOCs	EPN	mg/kg	0.2				<0.2	<0.2	0
TRH (NEPM 1999 Fractions)	C10 - C14	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<20.0	0	71.0	31.0	78
	C10 - C36 (Sum of total)	mg/kg	50	<50.0	<50.0	0	351.0	224.0	44
	C15 - C28	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	170.0	100.0	52
	C29 - C36	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<50.0	0	110.0	93.0	17
	C6 - C9	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
TRH (NEPM 2013 Fractions)	F1: C6 - C10	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
	F1: C6-C10 less BTEX	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<20.0	0	<20.0	<20.0	0
	F2: C10-C16	mg/kg	50	<50.0	<50.0	0	66.0	<50.0	28
	F2: C10-C16 less naphthalene	mg/kg	50	<50.0	<50.0	0	66.0	<50.0	28
	F3: C16-C34	mg/kg	100	<100.0	<100.0	0	230.0	160.0	36
	F4C34-C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	C10 - C40 (Sum of total)	mg/kg	100 (Primary): 50 (Interlab)	<100.0	<100.0	0	296.0	160.0	60

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (5-10 x EQL); 50 (10-3(
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any r

			SDG	17-Dec-21	Interlab_D		9-Dec-21	Interlab_D	
			Field ID	BH6_1.9-2.0	Trip 3	**RPD**	CPT2_0.4-0.5	Trip 1	**RPD**
			Sampled Date/Time	16/12/2021	16/12/2021	(%)	8/12/2021	8/12/2021	(%)
Chemical Group	**Chemical Name**	**Units**	**EQL**						
BTEX	Benzene	mg/kg	0.1 (Primary): 0.2 (Interlab)	<0.1	<0.2	0	<0.1	<0.2	0
	Ethylbenzene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.5	0	<0.1	<0.5	0
	Toluene	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.5	0	<0.1	<0.5	0
	Xylene (m & p)	mg/kg	0.2 (Primary): 0.5 (Interlab)	<0.2	<0.5	0	<0.2	<0.5	0
	Xylene (o)	mg/kg	0.1 (Primary): 0.5 (Interlab)	<0.1	<0.5	0	<0.1	<0.5	0
	Xylene Total	mg/kg	0.3 (Primary): 0.5 (Interlab)	<0.3	<0.5	0	<0.3	<0.5	0
Inorganics	Moisture Content (dried @ 103°C)	%	1	22.0			28.0		
Metals	Arsenic	mg/kg	2 (Primary): 5 (Interlab)	5.1	6.0	16	6.8	<5.0	31
	Cadmium	mg/kg	0.4 (Primary): 1 (Interlab)	<0.4	<1.0	0	<0.4	<1.0	0
	Chromium	mg/kg	5 (Primary): 2 (Interlab)	34.0	46.0	30	32.0	22.0	37
	Copper	mg/kg	5	19.0	26.0	31	19.0	13.0	38
	Lead	mg/kg	5	14.0	12.0	15	11.0	12.0	9
	Mercury	mg/kg	0.1	<0.1	<0.1	0	<0.1	<0.1	0
	Nickel	mg/kg	5 (Primary): 2 (Interlab)	10.0	9.0	11	7.7	7.0	10
	Zinc	mg/kg	5	19.0	18.0	5	20.0	14.0	35
OCP	4,4-DDE	mg/kg	0.05				<0.05	<0.05	0
	a-BHC	mg/kg	0.05				<0.05	<0.05	0
	Aldrin	mg/kg	0.05				<0.05	<0.05	0
	Aldrin + Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	b-BHC	mg/kg	0.05				<0.05	<0.05	0
	Chlordane	mg/kg	0.1 (Primary): 0.05 (Interlab)				<0.1	<0.05	0
	d-BHC	mg/kg	0.05				<0.05	<0.05	0
	DDD	mg/kg	0.05				<0.05	<0.05	0
	DDT	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.2	0
	DDT+DDE+DDD	mg/kg	0.05				<0.05	<0.05	0
	Dieldrin	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan I	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan II	mg/kg	0.05				<0.05	<0.05	0
	Endosulfan sulphate	mg/kg	0.05				<0.05	<0.05	0
	Endrin	mg/kg	0.05				<0.05	<0.05	0
	Endrin aldehyde	mg/kg	0.05				<0.05	<0.05	0
	Endrin ketone	mg/kg	0.05				<0.05	<0.05	0
	g-BHC (Lindane)	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor	mg/kg	0.05				<0.05	<0.05	0
	Heptachlor epoxide	mg/kg	0.05				<0.05	<0.05	0
	Hexachlorobenzene	mg/kg	0.05				<0.05	<0.05	0
	Methoxychlor	mg/kg	0.05 (Primary): 0.2 (Interlab)				<0.05	<0.2	0
	Toxaphene	mg/kg	0.5				<0.5		
	Vic EPA IWRG 621 OCP (Total)*	mg/kg	0.1				<0.1		
	Vic EPA IWRG 621 Other OCP (Total)*	mg/kg	0.1				<0.1		
OPP	Azinophos methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Bolstar (Sulprofos)	mg/kg	0.2				<0.2		
	Chlorfenvinphos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Chlorpyrifos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Chlorpyrifos-methyl	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Coumaphos	mg/kg	2				<2.0		
	Demeton-O	mg/kg	0.2				<0.2		
	Demeton-S	mg/kg	0.2				<0.2		
	Diazinon	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Dichlorvos	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Dimethoate	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Disulfoton	mg/kg	0.2				<0.2		
	Ethion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Ethoprop	mg/kg	0.2				<0.2		
	Fenitrothion	mg/kg	0.2				<0.2		
	Fensulfothion	mg/kg	0.2				<0.2		
	Fenthion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Malathion	mg/kg	0.2 (Primary): 0.05 (Interlab)				<0.2	<0.05	0
	Merphos	mg/kg	0.2				<0.2		
	Methyl parathion	mg/kg	0.2				<0.2	<0.2	0
	Mevinphos (Phosdrin)	mg/kg	0.2				<0.2		
	Monocrotophos	mg/kg	2 (Primary): 0.2 (Interlab)				<2.0	<0.2	0
	Naled (Dibrom)	mg/kg	0.2				<0.2		
	Omethoate	mg/kg	2				<2.0		
	Parathion	mg/kg	0.2				<0.2	<0.2	0
	Phorate	mg/kg	0.2				<0.2		
	Pyrazophos	mg/kg	0.2				<0.2		
	Ronnel	mg/kg	0.2				<0.2		
	Terbufos	mg/kg	0.2				<0.2		
	Trichloronate	mg/kg	0.2				<0.2		
	Tetrachlorvinphos	mg/kg	0.2				<0.2		
	Tokuthion	mg/kg	0.2				<0.2		

	SDG	17-Dec-21	Interlab_D		9-Dec-21	Interlab_D	
	Field ID	BH6_1.9-2.0	Trip 3	RPD	CPT2_0.4-0.5	Trip 1	RPD
	Sampled Date/Time	16/12/2021	16/12/2021	(%)	8/12/2021	8/12/2021	(%)
Chemical Group	Chemical Name	Units	EQL						
PAH	Acenaphthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Acenaphthylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (lower bound) *	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(a)pyrene TEQ (medium bound) *	mg/kg	0.5	0.6	0.6	0	0.6	0.6	0
	Benzo(a)pyrene TEQ (upper bound) *	mg/kg	0.5	1.2	1.2	0	1.2	1.2	0
	Benzo(g,h,i)perylene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo(k)fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Chrysene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Benzo[b+j]fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Dibenz(a,h)anthracene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluoranthene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Fluorene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Indeno(1,2,3-c,d)pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Naphthalene	mg/kg	0.5 (Primary): 1 (Interlab)	<0.5	<0.5	0	<0.5	<0.5	0
	Phenanthrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Pyrene	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
	Total PAHs	mg/kg	0.5	<0.5	<0.5	0	<0.5	<0.5	0
Pesticides	Pirimiphos-methyl	mg/kg	0.2				<0.2		
Polychlorinated Biphenyls	Arochlor 1221	mg/kg	0.1				<0.1		
	Aroclor 1016	mg/kg	0.1				<0.1		
	Aroclor 1232	mg/kg	0.1				<0.1		
	Aroclor 1242	mg/kg	0.1				<0.1		
	Aroclor 1248	mg/kg	0.1				<0.1		
	Aroclor 1254	mg/kg	0.1				<0.1		
	Aroclor 1260	mg/kg	0.1				<0.1		
	PCBs (Sum of total)	mg/kg	0.1				<0.1	<0.1	0
SVOCs	EPN	mg/kg	0.2				<0.2		
TRH (NEPM 1999 Fractions)	C10 - C14	mg/kg	20 (Primary): 50 (Interlab)	<20.0	<50.0	0	<20.0	<50.0	0
	C10 - C36 (Sum of total)	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	C15 - C28	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<100.0	0	<50.0	<100.0	0
	C29 - C36	mg/kg	50 (Primary): 100 (Interlab)	<50.0	<100.0	0	<50.0	<100.0	0
	C6 - C9	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<10.0	0	<20.0	<10.0	0
TRH (NEPM 2013 Fractions)	F1: C6 - C10	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<10.0	0	<20.0	<10.0	0
	F1: C6-C10 less BTEX	mg/kg	20 (Primary): 10 (Interlab)	<20.0	<10.0	0	<20.0	<10.0	0
	F2: C10-C16	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	F2: C10-C16 less naphthalene	mg/kg	50	<50.0	<50.0	0	<50.0	<50.0	0
	F3: C16-C34	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	F4C34-C40	mg/kg	100	<100.0	<100.0	0	<100.0	<100.0	0
	C10 - C40 (Sum of total)	mg/kg	100 (Primary): 50 (Interlab)	<100.0	<50.0	0	<100.0	<50.0	0

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (5-10 x EQL); 50 (10-3(
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any r

			SDG	28-Jan-22	28-Jan-22	
			Field ID	BH9	DUP-1	RPD
			Sampled Date/Time	27/01/2022	27/01/2022	(%)
Chemical Group	**Chemical Name**	**Units**	**EQL**			
PAH	Acenaphthene	µg/l	1	<2	<2	0
	Acenaphthylene	µg/l	1	<2	<2	0
	Anthracene	µg/l	1	<2	<2	0
	Benz(a)anthracene	µg/l	1	<1	<1	0
	Benzo(g,h,i)perylene	µg/l	1	<1	<1	0
	Benzo(k)fluoranthene	µg/l	1	<1	<1	0
	Chrysene	µg/l	1	<1	<1	0
	Benzo(b+j)fluoranthene	mg/l	0.001	<0.001	<0.001	0
	Dibenz(a,h)anthracene	µg/l	1	<1	<1	0
	Fluoranthene	µg/l	1	<1	<1	0
	Indeno(1,2,3-c,d)pyrene	µg/l	1	<1	<1	0
	Phenanthrene	µg/l	1	<2	<2	0
	Pyrene	µg/l	1	<1	<1	0
	PAHs (Sum of total)	µg/l	1	<2	<2	0
	Benzo(a) pyrene	µg/l	1	<1	<1	0
	Fluorene	µg/l	1	<2	<2	0
Metals	Arsenic	mg/l	0.001	0.004	0.003	29
	Cadmium	mg/l	0.0002	<0.0002	<0.0002	0
	Lead	mg/l	0.001	0.006	0.005	18
	Mercury	mg/l	0.0001	<0.0001	<0.0001	0
	Nickel	mg/l	0.001	0.047	0.04	16
	Copper	mg/l	0.001	0.014	0.01	33
	Zinc	mg/l	0.005	0.17	0.14	19
	Chromium (III+VI)	mg/l	0.001	0.015	0.011	31
Per and polyfluoroalkyl substan	Perfluorobutane sulfonic acid (PFBS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluoropentane sulfonic acid (PFPeS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorohexane sulfonic acid (PFHxS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluoroheptane sulfonic acid (PFHpS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorooctanesulfonic acid (PFOS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorodecane sulfonic acid (PFDS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorobutanoic acid (PFBA)	mg/l	5e-005	<0.00005	<0.00005	0
	Perfluoropentanoic acid (PFPeA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorohexanoic acid (PFHxA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluoropropanesulfonic acid (PFPrS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorononanesulfonic acid (PFNS)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluoroheptanoic acid (PFHpA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorooctanoic acid (PFOA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorononanoic acid (PFNA)	mg/l	1e-005	<0.00001	<0.00001	0
	N-Methylperfluorooctanesulfonamidoethanol (N-MeFOSE)	mg/l	5e-005	<0.00005	<0.00005	0
	Perfluorodecanoic acid (PFDA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluoroundecanoic acid (PFUnDA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorododecanoic acid (PFDoDA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorotridecanoic acid (PFTrDA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorotetradecanoic acid (PFTeDA)	mg/l	1e-005	<0.00001	<0.00001	0
	Perfluorooctane sulfonamide (PFOSA)	mg/l	5e-005	<0.00005	<0.00005	0
	N-Ethyl perfluorooctane sulfonamide (NEtFOSA)	mg/l	5e-005	<0.00005	<0.00005	0
	N-ethylperfluorooctanesulfonamidoethanol (NEtFOSE)	mg/l	5e-005	<0.00005	<0.00005	0
	N-ethyl-perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	mg/l	5e-005	<0.00005	<0.00005	0
	N-methylperfluorooctane sulfonamidoacetic acid (NMeFOSAA)	mg/l	5e-005	<0.00005	<0.00005	0
	N-Methyl perfluorooctane sulfonamide (NMeFOSA)	mg/l	5e-005	<0.00005	<0.00005	0
	4:2 Fluorotelomer sulfonic acid (4:2 FTS)	mg/l	1e-005	<0.00001	<0.00001	0
	6:2 Fluorotelomer sulfonic acid (6:2 FTS)	mg/l	5e-005	<0.00005	<0.00005	0
	8:2 Fluorotelomer sulfonic acid (8:2 FTS)	mg/l	1e-005	<0.00001	<0.00001	0
	10:2 Fluorotelomer sulfonic acid (10:2 FTS)	mg/l	1e-005	<0.00001	<0.00001	0
	Sum (PFHxS + PFOS)	mg/l	1e-005	<0.00001	<0.00001	0
	Sum of PFASs (n=28)	mg/l	0.0001	<0.0001	<0.0001	0
	Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	µg/L	0.01	<0.01	<0.01	0
	Sum of PFAS (WA DER List)	µg/L	0.05	<0.05	<0.05	0
	Sum of US EPA PFAS (PFOS + PFOA)*	µg/L	0.01	<0.01	<0.01	0
BTEX	Benzene	µg/l	1	<1	<1	0
	Toluene	µg/l	1	<1	<1	0
	Ethylbenzene	µg/l	1	<1	<1	0
	Xylene (o)	µg/l	1	<1	<1	0
	Xylene (m & p)	µg/l	2	<2	<2	0
	Xylene Total	µg/l	3	<3	<3	0
Polycyclic Aromatic Hydrocarbo	Naphthalene	µg/l	1	<2	<2	0
TRH	C6 - C9	µg/l	20	<20	<20	0
	C10 - C14	µg/l	50	<50	<50	0
	C15 - C28	µg/l	100	<100	100	0
	C29 - C36	µg/l	100	<100	<100	0
	C10 - C36 (Sum of total)	µg/l	100	<100	100	0
	F1 (C6 - C10)	µg/l	20	<20	<20	0
	F1 (C6 - C10) less BTEX	µg/l	20	<20	<20	0
	F2 (C10 - C16)	µg/l	50	<50	<50	0
	F2 C10 - C16 (minus Naphthalene)	µg/l	50	<50	<50	0
	F3 (C16 - C34)	µg/l	100	<100	200	67
	F4 (C34 - C40)	µg/l	100	<100	<100	0
	C10 - C40 (Sum of total)	µg/l	100	<100	200	67

*RPDs have only been considered where a concentration is greater than 5 times the EQL.
**High RPDs are in bold (Acceptable RPDs for each EQL multiplier range are: 100 (5-10 x EQL); 50 (10-30 x EQL); 30 (> 30 x EQL))
***Interlab Duplicates are matched on a per compound basis as methods vary between laboratories. Any methods in the row header relate to those used in the primary laboratory

			Field ID	TRIP BLANK	TRIP SPIKE	TRIP BLANK	TRIP SPIKE	TRIP BLANK	TRIP SPIKE	TRIP BLANK
			Sampled_Date	8/12/2021	8/12/2021	13/12/2021	13/12/2021	14/01/2022	14/01/2022	27/01/2022
			Sample Type	Trip_B	Trip_S	Trip_B	Trip_S	Trip_B	Trip_S	Trip_B ^
Method_Type	**ChemName**	**Units***	**EQL**		**%**		**%**		**%**	
	Naphthalene	mg/kg	0.5	<0.5	100	<0.5	96	<0.5	84	
	C6 - C9	mg/kg	20	<20	100	<20	100	<20	92	<20
	C6-C10 less BTEX (F1)	mg/kg	20	<20		<20		<20		<20
	C6 - C10	mg/kg	20	<20	100	<20	100	<20	91	<20
BTEXN	Benzene	mg/kg	0.1	<0.1	100	<0.1	110	<0.1	95	<1
	Ethylbenzene	mg/kg	0.1	<0.1	100	<0.1	100	<0.1	90	<1
	Toluene	mg/kg	0.1	<0.1	100	<0.1	100	<0.1	92	<1
	Xylene (m & p)	mg/kg	0.2	<0.2	110	<0.2	100	<0.2	89	<2
	Xylene (o)	mg/kg	0.1	<0.1	100	<0.1	100	<0.1	90	<1
	Xylene Total	mg/kg	0.3	<0.3	100	<0.3	100	<0.3	98	<3

Note: * Trip spike sample results are reported as percemtages.
^ The trip blank sample collected on 27/02/22 was a water sample, with results reported in mg/L

Field ID	FIELD BLANK	RB-1	RB3	RB1
Sample Date	15/12/2021	9/12/2021	14/01/2022	27/01/2022
Sample Type	Field_B	Rinsate	Rinsate	Rinsate

Method Type	Chem Name	Units	EQL				
Heavy Metal	Arsenic	mg/l	0.001		<0.001	<0.001	<0.001
	Cadmium	mg/l	0.0002		<0.0002	<0.0002	<0.0002
	Chromium	mg/l	0.001		<0.001	<0.001	
	Copper	mg/l	0.001		<0.001	<0.001	<0.001
	Lead	mg/l	0.001		<0.001	<0.001	<0.001
	Mercury	mg/l	0.0001		<0.0001	<0.0001	<0.0001
	Nickel	mg/l	0.001		<0.001	<0.001	<0.001
	Zinc	mg/l	0.005		<0.005	<0.005	**0.008**
OCP	4,4-DDE	µg/l	0.2		<0.2	<0.2	
	a-BHC	µg/l	0.2		<0.2	<0.2	
	Aldrin	µg/l	0.2		<0.2	<0.2	
	Aldrin + Dieldrin	µg/l	0.2		<0.2	<0.2	
	b-BHC	µg/l	0.2		<0.2	<0.2	
	Chlordane	µg/l	2		<2	<2	
	d-BHC	µg/l	0.2		<0.2	<0.2	
	DDD	µg/l	0.2		<0.2	<0.2	
	DDT	µg/l	0.2		<0.2	<0.2	
	DDT+DDE+DDD	µg/l	0.2		<0.2	<0.2	
	Dieldrin	µg/l	0.2		<0.2	<0.2	
	Endosulfan I	µg/l	0.2		<0.2	<0.2	
	Endosulfan II	µg/l	0.2		<0.2	<0.2	
	Endosulfan sulphate	µg/l	0.2		<0.2	<0.2	
	Endrin	µg/l	0.2		<0.2	<0.2	
	Endrin aldehyde	µg/l	0.2		<0.2	<0.2	
	Endrin ketone	µg/l	0.2		<0.2	<0.2	
	g-BHC (Lindane)	µg/l	0.2		<0.2	<0.2	
	Heptachlor	µg/l	0.2		<0.2	<0.2	
	Heptachlor epoxide	µg/l	0.2		<0.2	<0.2	
	Hexachlorobenzene	µg/l	0.2		<0.2	<0.2	
	Methoxychlor	µg/l	0.2		<0.2	<0.2	
	Toxaphene	mg/l	0.005		<0.005	<0.005	
OPP	Azinophos methyl	µg/l	2		<2	<2	
	Bolstar (Sulprofos)	µg/l	2		<2	<2	
	Chlorfenvinphos	µg/l	20		<20	<20	
	Chlorpyrifos	µg/l	2		<2	<2	
	Chlorpyrifos-methyl	mg/l	0.002		<0.002	<0.002	
	Coumaphos	µg/l	20		<20	<20	
	Demeton-O	µg/l	2		<2	<2	
	Demeton-S	µg/l	2		<2	<2	
	Diazinon	µg/l	2		<2	<2	
	Dichlorvos	µg/l	2		<2	<2	
	Dimethoate	µg/l	2		<2	<2	
	Disulfoton	µg/l	2		<2	<2	
	EPN	µg/l	2		<2	<2	
	Ethion	µg/l	2		<2	<2	
	Ethoprop	µg/l	2		<2	<2	
	Fenitrothion	µg/l	2		<2	<2	
	Fensulfothion	µg/l	2		<2	<2	
	Fenthion	µg/l	2		<2	<2	
	Malathion	µg/l	2		<2	<2	
	Merphos	mg/l	0.002		<0.002	<0.002	
	Methyl parathion	µg/l	2		<2	<2	
	Mevinphos (Phosdrin)	µg/l	2		<2	<2	
	Monocrotophos	µg/l	2		<2	<2	
	Naled (Dibrom)	µg/l	2		<2	<2	
	Omethoate	µg/l	20		<20	<20	
	Parathion	µg/l	2		<2	<2	
	Phorate	µg/l	2		<2	<2	
	Pirimiphos-methyl	mg/l	0.02		<0.02	<0.02	
	Pyrazophos	µg/l	2		<2	<2	
	Ronnel	µg/l	2		<2	<2	
	Terbufos	µg/l	2		<2	<2	
	Trichloronate	µg/l	2		<2	<2	
	Tetrachlorvinphos	mg/l	0.002		<0.002	<0.002	
	Tokuthion	µg/l	2		<2	<2	

Field ID	FIELD BLANK	RB-1	RB3	RB1
Sample Date	15/12/2021	9/12/2021	14/01/2022	27/01/2022
Sample Type	Field_B	Rinsate	Rinsate	Rinsate

Method Type	Chem Name	Units	EQL				
PAH	Acenaphthene	µg/l	1		<1	<1	<1
	Acenaphthylene	µg/l	1		<1	<1	<1
	Anthracene	µg/l	1		<1	<1	<1
	Benzo(a)anthracene	µg/l	1		<1	<1	
	Benzo(a)pyrene	µg/l	1		<1	<1	
	Benzo(g,h,i)perylene	µg/l	1		<1	<1	<1
	Benzo(k)fluoranthene	µg/l	1		<1	<1	<1
	Chrysene	µg/l	1		<1	<1	<1
	Benzo[b+j]fluoranthene	mg/l	0.001		<0.001	<0.001	
	Dibenz(a,h)anthracene	µg/l	1		<1	<1	<1
	Fluoranthene	µg/l	1		<1	<1	<1
	Fluorene	µg/l	1		<1	<1	<1
	Indeno(1,2,3-c,d)pyrene	µg/l	1		<1	<1	<1
	Naphthalene	µg/l	1		<1	<1	<1
	Phenanthrene	µg/l	1		<1	<1	<1
	Pyrene	µg/l	1		<1	<1	<1
	Total PAHs	µg/l	1		<1	<1	
PCB	Arochlor 1221	µg/l	5		<5	<5	
	Aroclor 1016	µg/l	5		<5	<5	
	Aroclor 1232	µg/l	5		<5	<5	
	Aroclor 1242	µg/l	5		<5	<5	
	Aroclor 1248	µg/l	5		<5	<5	
	Aroclor 1254	µg/l	5		<5	<5	
	Aroclor 1260	µg/l	5		<5	<5	
	PCBs (Sum of total)	µg/l	5		<5	<5	
PFAS	2-(2-Methyl-1,4-chlorophenoxy) propionic acid	µg/L	0.05	<0.05			<0.05
	N,N-Dimethylformamide	µg/L	0.05	<0.05			<0.05
	6:2 Fluorotelomer Sulfonate (6:2 FtS)	mg/l	0.00005	<0.00005			<0.00001
	1H.1H.2H.2H-perfluorodecanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	1H.1H.2H.2H-perfluorohexanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	N-ethyl-perfluorooctanesulfonamidoacetic acid	mg/l	0.00005	<0.00005			<0.00001
	N-methyl-perfluorooctanesulfonamidoacetic acid	mg/l	0.00005	<0.00005			<0.00001
	Perfluorobutanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorobutanoic acid	mg/l	0.00005	<0.00005			<0.00005
	Perfluorodecanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorodecanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorododecanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorooctanoate Acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluoroheptanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorohexanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorohexanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorononanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorooctanesulfonamide	mg/l	0.00005	<0.00005			<0.00005
	Perfluorooctanesulfonic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluoropentanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorotetradecanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluorotridecanoic acid	mg/l	0.00001	<0.00001			<0.00001
	Perfluoroundecanoic acid	mg/l	0.00001	<0.00001			<0.00001
TRH	C10 - C14	µg/l	50		<50	<50	<50
	C15 - C28	µg/l	100		<100	<100	<100
	C29 - C36	µg/l	100		<100	<100	<100
	C10 - C36 (Sum of total)	µg/l	100		<100	<100	<100
	C10-C16	mg/l	0.05		<0.05	<0.05	
	C16-C34	mg/l	0.1		<0.1	<0.1	
	C34-C40	mg/l	0.1		<0.1	<0.1	
	C6 - C10	mg/l	0.02		<0.02	<0.02	
	C6-C10 less BTEX (F1)	mg/l	0.02		<0.02	<0.02	
	C6 - C9	µg/l	20		<20	<20	<20
	C10 - C40 (Sum of total)	µg/l	100		<100	<100	<100
	F2-NAPHTHALENE	mg/l	0.05		<0.05	<0.05	
BTEXN	Naphthalene	µg/l	1		<10	<10	<1
	Benzene	µg/l	1		<1	<1	<1
	Ethylbenzene	µg/l	1		<1	<1	<1
	Toluene	µg/l	1		<1	<1	<1
	Xylene (m & p)	µg/l	2		<2	<2	<2
	Xylene (o)	µg/l	1		<1	<1	<1
	Xylene Total	µg/l	3		<3	<3	<3

APPENDIX H: LABORATORY REPORTS AND CHAIN OF CUSTODY DOCUMENTATION

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Locke Mobile: Email: matthew.Locke @tetratech.com

Invoices to: general.admin@coffey.com Phone: Email: delfa.sarabia @tetratech.com

Project No: SYDGE295047 Task No:

Project Name: St George Dragons Laboratory: Eurofins

Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia

Quote number (if different to current quoted prices):

Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Analysis Request Section: Hold	NOTES
	BH01 _ 0.0-0.01	7/12/21		Soil	Jar, asbestos	Hold	✓	
	" " _ 0.4-0.5						✓	
	" " _ 0.9-1.0						✓	
	" " _ 1.5-1.6						✓	
	" " _ 3.0-3.1						✓	
	" " _							

RELINQUISHED BY

Name: Cameron Prentice Date: 7/12/21 → Coffey Time: 16:30

Name: Date: → Company: Time:

RECEIVED BY

Name: Lily Cains Date: 7/12/21

Company: Eurofins Time: 4:45 pm

Name: Date:

Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No. 4.4°C

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 847815

Wed 8/12/2021 8:51 AM

Locke, Matthew <Matthew.Locke@coffey.com>

RE: Eurofins Sample Receipt Advice - Report 847815 : Site ST GEORGE DRAGONS (SYDGE295047)

To [redacted] Hannah Mawbey

Cc [redacted] #AU04_Enviro_Sample_NSW

EXTERNAL EMAIL*

Hi Hannah

Can you please schedule these samples as follows:

Sample ID	Suite M8 (Metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	PFAS (28 Compounds)	ASS Screen (pHF/pHFOX)	SPOCAS	Cation Exchange Capacity	pH	TOC
BH01-0.0-0.1	X	X	X	X	X			X	X	X
BH01-0.4-0.5										
BH01-0.9-1.0										
BH01-1.5-1.6	X	X								
BH01-3.0-3.1										

Analysis to be completed on standard TAT. The remainder of the samples should be kept on hold in the lab.

Thanks and regards

Matt

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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NATA # 1261 Site # 1254

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Lane Cove West NSW 2066
Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

Brisbane
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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
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Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE DRAGONS
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Dec 8, 2021 8:51 AM
Eurofins reference	847815

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 4.4 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

No PFAS container received so unable to perform PFAS testing.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
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NATA # 1261 Site # 18217

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Eurofins ARL Pty Ltd
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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 847815
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 8, 2021 8:51 AM
Due: Dec 15, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH01_0.0-0.1	Dec 07, 2021		Soil	W21-De16079	X		X	X	X	X	X	X
2	BH01_0.4-0.5	Dec 07, 2021		Soil	W21-De16080		X						
3	BH01_0.9-1.0	Dec 07, 2021		Soil	W21-De16081		X						
4	BH01_1.5-1.6	Dec 07, 2021		Soil	W21-De16082						X		X
5	BH01_3.0-3.1	Dec 07, 2021		Soil	W21-De16083		X						
Test Counts						1	3	1	1	1	2	1	2

Certificate of Analysis

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NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

Attention:	Matthew Locke
Report	847815-AID
Project Name	ST GEORGE DRAGONS
Project ID	SYDGE295047
Received Date	Dec 07, 2021
Date Reported	Dec 21, 2021

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE DRAGONS
Project ID SYDGE295047
Date Sampled Dec 07, 2021
Report 847815-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH01_0.0-0.1	21-De16079	Dec 07, 2021	Approximate Sample 16g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 08, 2021	Indefinite

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16 Mars Road
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 847815
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 8, 2021 8:51 AM
Due: Dec 15, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH01_0.0-0.1	Dec 07, 2021		Soil	W21-De16079	X		X	X	X	X	X	X
2	BH01_0.4-0.5	Dec 07, 2021		Soil	W21-De16080		X						
3	BH01_0.9-1.0	Dec 07, 2021		Soil	W21-De16081		X						
4	BH01_1.5-1.6	Dec 07, 2021		Soil	W21-De16082						X		X
5	BH01_3.0-3.1	Dec 07, 2021		Soil	W21-De16083		X						
Test Counts						1	3	1	1	1	2	1	2

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

The sample received was not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-sample to be analysed accurately represented the sample received.

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **847815-S**
Project name ST GEORGE DRAGONS
Project ID SYDGE295047
Received Date Dec 07, 2021

Client Sample ID			**BH01_0.0-0.1**	**BH01_1.5-1.6**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**W21-De16079**	**W21-De16082**
Date Sampled			**Dec 07, 2021**	**Dec 07, 2021**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	87	< 50
TRH C29-C36	50	mg/kg	96	< 50
TRH C10-C36 (Total)	50	mg/kg	183	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	84	102
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			BH01_0.0-0.1	BH01_1.5-1.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De16079	W21-De16082
Date Sampled			Dec 07, 2021	Dec 07, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	0.7	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	0.7	< 0.5
2-Fluorobiphenyl (surr.)	1	%	131	101
p-Terphenyl-d14 (surr.)	1	%	128	101
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	90	-
Tetrachloro-m-xylene (surr.)	1	%	146	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-

Client Sample ID			BH01_0.0-0.1	BH01_1.5-1.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De16079	W21-De16082
Date Sampled			Dec 07, 2021	Dec 07, 2021
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	76	-
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	90	-
Tetrachloro-m-xylene (surr.)	1	%	146	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	150	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	150	< 100
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	18	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.1	-
Total Organic Carbon	0.1	%	4.2	-
% Moisture	1	%	19	22
Metals M8				
Arsenic	2	mg/kg	30	4.0
Cadmium	0.4	mg/kg	0.4	< 0.4
Chromium	5	mg/kg	17	28
Copper	5	mg/kg	51	33
Lead	5	mg/kg	61	13
Mercury	0.1	mg/kg	0.1	< 0.1

Client Sample ID			BH01_0.0-0.1	BH01_1.5-1.6
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De16079	W21-De16082
Date Sampled			Dec 07, 2021	Dec 07, 2021
Test/Reference	LOR	Unit		
Metals M8				
Nickel	5	mg/kg	15	11
Zinc	5	mg/kg	430	31
Cation Exchange Capacity				
Cation Exchange Capacity	0.05	meq/100g	11	-

Sample History

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

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	Dec 10, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Dec 10, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 10, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 10, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Dec 14, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 14, 2021	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Dec 10, 2021	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Dec 14, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
% Moisture	Sydney	Dec 08, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 847815
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 8, 2021 8:51 AM
Due: Dec 15, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794													
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	BH01_0.0-0.1	Dec 07, 2021		Soil	W21-De16079	X		X	X	X	X	X	X
2	BH01_0.4-0.5	Dec 07, 2021		Soil	W21-De16080		X						
3	BH01_0.9-1.0	Dec 07, 2021		Soil	W21-De16081		X						
4	BH01_1.5-1.6	Dec 07, 2021		Soil	W21-De16082						X		X
5	BH01_3.0-3.1	Dec 07, 2021		Soil	W21-De16083		X						
Test Counts						1	3	1	1	1	2	1	2

Date Reported:Dec 21, 2021

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	99			70-130	Pass	
TRH C10-C14	%	89			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	104			70-130	Pass	
Toluene	%	96			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	95			70-130	Pass	
o-Xylene	%	96			70-130	Pass	
Xylenes - Total*	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	96			70-130	Pass	
TRH C6-C10	%	101			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	104			70-130	Pass	
Acenaphthylene	%	104			70-130	Pass	
Anthracene	%	109			70-130	Pass	
Benz(a)anthracene	%	94			70-130	Pass	
Benzo(a)pyrene	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	%	99			70-130	Pass	
Benzo(g.h.i)perylene	%	98			70-130	Pass	
Benzo(k)fluoranthene	%	110			70-130	Pass	
Chrysene	%	95			70-130	Pass	
Dibenz(a.h)anthracene	%	90			70-130	Pass	
Fluoranthene	%	103			70-130	Pass	
Fluorene	%	109			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	98			70-130	Pass	
Naphthalene	%	105			70-130	Pass	
Phenanthrene	%	105			70-130	Pass	
Pyrene	%	104			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	%	80			70-130	Pass	
4.4'-DDD	%	78			70-130	Pass	
4.4'-DDE	%	90			70-130	Pass	
4.4'-DDT	%	114			70-130	Pass	
a-HCH	%	76			70-130	Pass	
Aldrin	%	84			70-130	Pass	
b-HCH	%	78			70-130	Pass	
d-HCH	%	81			70-130	Pass	
Dieldrin	%	81			70-130	Pass	
Endosulfan I	%	78			70-130	Pass	
Endosulfan II	%	80			70-130	Pass	
Endosulfan sulphate	%	77			70-130	Pass	
Endrin	%	73			70-130	Pass	
Endrin aldehyde	%	77			70-130	Pass	
Endrin ketone	%	76			70-130	Pass	
g-HCH (Lindane)	%	82			70-130	Pass	
Heptachlor	%	118			70-130	Pass	
Heptachlor epoxide	%	84			70-130	Pass	
Hexachlorobenzene	%	82			70-130	Pass	
Methoxychlor	%	86			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	82			70-130	Pass	
Dimethoate	%	96			70-130	Pass	
Ethion	%	87			70-130	Pass	
Fenitrothion	%	101			70-130	Pass	
Methyl parathion	%	73			70-130	Pass	
Mevinphos	%	88			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	110			70-130	Pass	
Aroclor-1260	%	95			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	87			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	104			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	100			80-120	Pass	
Copper	%	98			80-120	Pass	
Lead	%	95			80-120	Pass	
Mercury	%	109			80-120	Pass	
Nickel	%	97			80-120	Pass	
Zinc	%	99			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S21-De23230	NCP	%	92			70-130	Pass	
TRH C10-C14	S21-De20246	NCP	%	81			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-De23230	NCP	%	97			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Toluene	S21-De23230	NCP	%	97			70-130	Pass	
Ethylbenzene	S21-De23230	NCP	%	101			70-130	Pass	
m&p-Xylenes	S21-De23230	NCP	%	98			70-130	Pass	
o-Xylene	S21-De23230	NCP	%	101			70-130	Pass	
Xylenes - Total*	S21-De23230	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-De23230	NCP	%	106			70-130	Pass	
TRH C6-C10	S21-De23230	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De22518	NCP	%	90			70-130	Pass	
Acenaphthylene	S21-De22518	NCP	%	82			70-130	Pass	
Anthracene	S21-De22518	NCP	%	94			70-130	Pass	
Benz(a)anthracene	S21-De22518	NCP	%	81			70-130	Pass	
Benzo(a)pyrene	S21-De22518	NCP	%	87			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De22518	NCP	%	81			70-130	Pass	
Benzo(g.h.i)perylene	S21-De22518	NCP	%	88			70-130	Pass	
Benzo(k)fluoranthene	S21-De22518	NCP	%	102			70-130	Pass	
Chrysene	S21-De22518	NCP	%	82			70-130	Pass	
Dibenz(a.h)anthracene	S21-De22518	NCP	%	85			70-130	Pass	
Fluoranthene	S21-De22518	NCP	%	89			70-130	Pass	
Fluorene	S21-De22518	NCP	%	93			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De22518	NCP	%	89			70-130	Pass	
Naphthalene	S21-De22518	NCP	%	90			70-130	Pass	
Phenanthrene	S21-De22518	NCP	%	88			70-130	Pass	
Pyrene	S21-De22518	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-De22518	NCP	%	89			70-130	Pass	
4.4'-DDD	S21-De22518	NCP	%	84			70-130	Pass	
4.4'-DDE	S21-De22518	NCP	%	96			70-130	Pass	
4.4'-DDT	S21-De22518	NCP	%	124			70-130	Pass	
a-HCH	S21-De22518	NCP	%	83			70-130	Pass	
Aldrin	S21-De22518	NCP	%	89			70-130	Pass	
b-HCH	S21-De22518	NCP	%	83			70-130	Pass	
d-HCH	S21-De22518	NCP	%	89			70-130	Pass	
Dieldrin	S21-De22518	NCP	%	89			70-130	Pass	
Endosulfan I	S21-De22518	NCP	%	88			70-130	Pass	
Endosulfan II	S21-De22518	NCP	%	86			70-130	Pass	
Endosulfan sulphate	S21-De22518	NCP	%	82			70-130	Pass	
Endrin	S21-De22518	NCP	%	80			70-130	Pass	
Endrin aldehyde	S21-De22518	NCP	%	74			70-130	Pass	
Endrin ketone	S21-De22518	NCP	%	82			70-130	Pass	
g-HCH (Lindane)	S21-De22518	NCP	%	88			70-130	Pass	
Heptachlor	S21-De22518	NCP	%	128			70-130	Pass	
Heptachlor epoxide	S21-De22518	NCP	%	89			70-130	Pass	
Hexachlorobenzene	S21-De22518	NCP	%	88			70-130	Pass	
Methoxychlor	S21-De22518	NCP	%	72			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-De22518	NCP	%	106			70-130	Pass	
Dimethoate	S21-De22518	NCP	%	90			70-130	Pass	
Ethion	S21-De22518	NCP	%	127			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methyl parathion	S21-De22518	NCP	%	99			70-130	Pass	
Mevinphos	S21-De22518	NCP	%	127			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-De22518	NCP	%	116			70-130	Pass	
Aroclor-1260	S21-De22518	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S21-De20246	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S21-De34542	NCP	%	98			75-125	Pass	
Cadmium	S21-De34542	NCP	%	98			75-125	Pass	
Chromium	S21-De22699	NCP	%	82			75-125	Pass	
Copper	S21-De34542	NCP	%	82			75-125	Pass	
Lead	S21-De34542	NCP	%	95			75-125	Pass	
Mercury	S21-De34542	NCP	%	95			75-125	Pass	
Nickel	W21-De16079	CP	%	82			75-125	Pass	
Zinc	S21-De20256	NCP	%	89			75-125	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	S21-De28126	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S21-De22541	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-De22541	NCP	mg/kg	73	120	50	30%	Fail	Q15
TRH C29-C36	S21-De22541	NCP	mg/kg	92	100	10	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De28126	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-De28126	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-De28126	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-De28126	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-De28126	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-De28126	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-De28126	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-De28126	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-De22526	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-De22526	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-De20601	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-De22526	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-De22526	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-De22526	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Pirimiphos-methyl	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-De22526	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S21-De22526	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S21-De22541	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-De22541	NCP	mg/kg	130	190	34	30%	Fail	Q15
TRH >C34-C40	S21-De22541	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M21-De30301	NCP	uS/cm	84	87	3.6	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	S21-De17199	NCP	pH Units	7.2	6.5	<1	30%	Pass	
% Moisture	W21-De16079	CP	%	19	16	20	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S21-De22697	NCP	mg/kg	4.5	5.8	24	30%	Pass	
Cadmium	S21-De22697	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-De22697	NCP	mg/kg	9.1	9.0	<1	30%	Pass	
Copper	S21-De22697	NCP	mg/kg	22	24	7.0	30%	Pass	
Lead	S21-De22697	NCP	mg/kg	17	13	24	30%	Pass	
Mercury	S21-De22697	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-De22697	NCP	mg/kg	14	26	56	30%	Fail	Q15
Zinc	S21-De22697	NCP	mg/kg	53	86	47	30%	Fail	Q15
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M21-De27108	NCP	meq/100g	25	26	3.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Emma Beesley	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Loche Mobile: Email: Matthew.Loche @tetratech.com

Invoices to: general.admin@coffey.com Phone: Email: delfa.sarabia @tetratech.com

Project No: SYDGE295074 Task No:

Project Name: St George Dragons Laboratory: Eurofins

Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia

Quote number (if different to current quoted prices):

Special Instructions:

Analysis Request Section: HOLD; SUITE M8 (METALS 8); SUITE B4 (TRH/BTEX/PAH); SUITE B15 (OCP/OPP/PCB); ASBESTOS (DETECT); CEC; pH; TOC

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	NOTES
	CPT11 - 0.1 - 0.2	8/12/21	Jar, b	Soil		STANDARD TAT	J = glass Jar b = Asbestos bag
	" " - 0.4 - 0.5		Jar, b				
	" " - 1.2 - 1.2		J				
	CPT10 - 0.1 - 0.2		J, b				
	" " - 0.4 - 0.5		J				
	" " - 1.1 - 1.2		J				
	CPT8 - 0.1 - 0.2		J, b				
	" " - 0.4 - 0.5		J				
	" " - 1.1 - 1.2		J				
	CPT7 - 0.1 - 0.2		J, b				
	" " - 0.4 - 0.5		J				
	" " - 1.1 - 1.2		J				
	CPT1 - 0.1 - 0.2		J, b				
	" " - 0.4 - 0.5		J				
	" " - 1.1 - 1.2		J				
	CPT2 - 0.1 - 0.2		J, b				

RELINQUISHED BY

Name: Cameron Prentice Date: 8/12/21 Time: 16.30

Coffey

Name: Date:

Company: Time:

RECEIVED BY

Name: Date:

Company: Time:

Name: Date:

Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is In Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke Mobile: Email: matthew.locke @tetratech.com
Invoices to: General admin Coffey Phone: Email: delta.sarabia @tetratech.com

Project No: SYDGE295047 Task No:
Project Name: St George Dragons Laboratory: Eurofins
Sampler's Name: Cameron Prentice Project Manager: Delta Sarabia
Quote number (if different to current quoted pricing):
Special Instructions:

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil, etc)	Container Type & Preservation*	T.A.T (specify)	Hold	SUITE M8	SUITE B4	SUITE B15	ASBESTOS (CAETECT)	CEC	PH	TOC	(VOLATILE TRH + BTEX)				NOTES
	CPT2 _ 0.4-0.5	8/12/21		Soil	J	STANDARD TAT	✓	✓	✓	✓									
	" _ 1.1-1.2	↓		↓	J	↓	✓												
	CPT3 _ 0.1-0.2				J, b		✓	✓	✓	✓	✓	✓	✓	✓					
	" _ 0.4-0.5				J		✓												
	" _ 1.1-1.2				J		✓												J= glass jar
	CPT5 _ 0.1-0.2				J, b		✓	✓	✓		✓								b = Asbestos bag
	CPT5 _ 0.4-0.5				J		✓												
	" _ 1.1-1.2				J		✓												
	CPT6 _ 0.1-0.2				J, b		✓	✓	✓		✓								
	" _ 0.4-0.5				J		✓												
	" _ 1.1-1.2				J		✓												
	Dup1				J		✓	✓	✓	✓									
	Trip1				J		✓	✓	✓	✓									* SEND TO ALS *
	Trip spike						✓								✓				
	Trip blank	↓		↓		↓	✓								✓				

RELINQUISHED BY		RECEIVED BY		Sample Receipt Advice: (Lab Use Only)
Name: Cameron Prentice	Date: 8/12/21 →	Name:	Date:	All Samples Recieved in Good Condition ☐
Coffey	Time:	Company:	Time:	All Documentation is in Proper Order ☐
Name:	Date: →	Name:	Date:	Samples Received Properly Chilled ☐
Company:	Time:	Company:	Time:	Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

* SUITE M8 - METALS 8
* SUITE B4 - TRH/BTEX/PAH
* SUITE B15 - OCP/OPP/PCB

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETR
COFFE

Project No: SYDGE
Project Name: St G
Sampler's Name: Cam
Quote number (If differen
Special Instructions:

Consigning Office: Chatswood
Report Results to: Matthew Loche Mobile: Email: Matthew.Loche @tetratech.com
Invoices to: general.admin@Coffey.Com Phone: Email: delta.sarabia @tetratech.com
Task No:
Laboratory: Eurofins
Project Manager: Delta Sarabia

Analysis Request Section

Eurofins Lab Batch Ref	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	HOLD	SUITE MS (METALS &	SUITE B1 (TRH/BTEX)	SUITE B15 (OCP/OPP/PCB)	ASBESTOS (DETECT)	CEC	pH	TOC	NOTES
CPT	8/12/21	Jar,b	Soil											
		Jar,b												
		J												J = glass Jar
CPT		J,b												b = Asbestos bag
		J												
CPT		J,b												
		J												
CPT		J,b												
		J												
CPT		J,b												
		J												
CPT		J,b			STANDARD TAT									

RECEIVED BY

8/12/21 16.30 → Name: Lily Cains Date: 9/12/21
Company: Eurofins Time: 10.19 am
→ Name: Date:
Company: Time:

Sample Receipt Advices (Lab Use Only)
All Samples Recieved In Good Condition ☐
All Documentation is In Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 2.8°C

Name: Camero
Coffey
Name:
Company:

*Container Type & Prese
Preserved, I - Ice, ST - So

ass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid
rvative

Report: 848454

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Contracting Office: Chatswood
Report Results to: Matthew Locke
Invoices to: general.admin@tetratech.com
Lab No:
Laboratory: Eurofins
Project Manager: Delta Sarebia
Email: Matthew Locke
Email: Delta Sarebia

Project No: 5
Project Name:
Sampler's Name:
Quote number:
Special Instructions:

Analysis Request Section

Eurofins Lab Batch Ref	Sample Date	Time	Matrix (Soil, etc)	Container Type & Preservation*	T.A.T (specify)	Hold	Suite M8	Suite B4	Suite B15	Asbestos (AS4964)	CEC	pH	TOC	Vacuum	NOTES
	8/12/21		Soil	J	STANDARD TAT		/	/	/						
	↓		↓	J	↓										
				J,b			/	/	/	/	/	/	/		
				J											
				J											J= glass jar
				J,b			/	/		/					b= Asbestos bag
				J											
				J											
				J,b			/	/		/					
				J											
				J											
				J			/	/	/						
				J			/	/	/						* SEND TO ALS *
														/	
														/	

RECEIVED BY

Relinquished	Received	Sample Receipt Advice: (Lab Use Only)
Name: Cameron Colley; Date: 8/12/21; Time:	Name: Lily Cains; Company: Eurofins; Date: 9/12/21; Time: 10:19 am	All Samples Recieved in Good Condition ☐
Name: ; Company: ; Date: ; Time:	Name: ; Company: ; Date: ; Time:	All Documentation is in Proper Order ☐
		Samples Received Properly Chilled ☐
		Lab. Ref/Batch No. 28°C

*Container Type & Preservative: B - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, S

Report: 848454

* SUITE M8 - METALS 8
* SUITE B4 - TRH / BTEX / PAH
* SUITE B15 - OCP / OPP / PCB

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Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE DRAGONS
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Dec 9, 2021 10:19 AM
Eurofins reference	848454

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 2.8 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.
✓	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample TRIP1 sent to ALS for analysis as requested.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	CPT11_0.1-0.2	Dec 08, 2021		Soil	W21-De20671	X				X	X		X		
2	CPT10_0.1-0.2	Dec 08, 2021		Soil	W21-De20672	X				X	X		X		
3	CPT10_0.4-0.5	Dec 08, 2021		Soil	W21-De20673						X		X		
4	CPT8_0.1-0.2	Dec 08, 2021		Soil	W21-De20674	X				X	X		X		
5	CPT7_0.1-0.2	Dec 08, 2021		Soil	W21-De20675	X					X		X		
6	CPT1_0.1-0.2	Dec 08, 2021		Soil	W21-De20676	X				X	X		X		
7	CPT1_1.1-1.2	Dec 08, 2021		Soil	W21-De20677						X		X		

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IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
8	CPT2_0.4-0.5	Dec 08, 2021		Soil	W21-De20678					X	X		X		
9	CPT3_0.1-0.2	Dec 08, 2021		Soil	W21-De20679	X		X	X	X	X	X	X		
10	CPT5_0.1-0.2	Dec 08, 2021		Soil	W21-De20680	X					X		X		
11	CPT6_0.1-0.2	Dec 08, 2021		Soil	W21-De20681	X					X		X		
12	DUP1	Dec 08, 2021		Soil	W21-De20682					X	X		X		
13	TRIP SPIKE	Dec 08, 2021		Soil	W21-De20683										X
14	TRIP BLANK	Dec 08, 2021		Soil	W21-De20684									X	
15	LAB SPIKE	Dec 08, 2021		Soil	W21-De20685										X
16	CPT11_0.4-0.5	Dec 08, 2021		Soil	W21-De20686		X								
17	CPT11_1.1-	Dec 08, 2021		Soil	W21-De20687		X								

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
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Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
	1.2														
18	CPT10_1.1-1.2	Dec 08, 2021		Soil	W21-De20688		X								
19	CPT8_0.4-0.5	Dec 08, 2021		Soil	W21-De20689		X								
20	CPT8_1.1-1.2	Dec 08, 2021		Soil	W21-De20690		X								
21	CPT7_0.4-0.5	Dec 08, 2021		Soil	W21-De20691		X								
22	CPT7_1.1-1.2	Dec 08, 2021		Soil	W21-De20692		X								
23	CPT1_0.4-0.5	Dec 08, 2021		Soil	W21-De20693		X								
24	CPT2_0.1-0.2	Dec 08, 2021		Soil	W21-De20694		X								
25	CPT2_1.1-1.2	Dec 08, 2021		Soil	W21-De20695		X								
26	CPT3_0.4-0.5	Dec 08, 2021		Soil	W21-De20696		X								

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Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
27	CPT3_1.1-1.2	Dec 08, 2021		Soil	W21-De20697		X								
28	CPT5_0.4-0.5	Dec 08, 2021		Soil	W21-De20698		X								
29	CPT5_1.1-1.2	Dec 08, 2021		Soil	W21-De20699		X								
30	CPT6_0.4-0.5	Dec 08, 2021		Soil	W21-De20700		X								
31	CPT6_1.1-1.2	Dec 08, 2021		Soil	W21-De20701		X								
Test Counts						8	16	1	1	7	12	1	12	1	2

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention:	Matthew Locke
Report	848454-AID
Project Name	ST GEORGE DRAGONS
Project ID	SYDGE295047
Received Date	Dec 09, 2021
Date Reported	Dec 16, 2021

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE DRAGONS
Project ID SYDGE295047
Date Sampled Dec 08, 2021
Report 848454-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
CPT11_0.1-0.2	21-De20671	Dec 08, 2021	Approximate Sample 146g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT10_0.1-0.2	21-De20672	Dec 08, 2021	Approximate Sample 102g Sample consisted of: Brown coarse-grained clayey soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT8_0.1-0.2	21-De20674	Dec 08, 2021	Approximate Sample 87g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT7_0.1-0.2	21-De20675	Dec 08, 2021	Approximate Sample 107g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT1_0.1-0.2	21-De20676	Dec 08, 2021	Approximate Sample 80g Sample consisted of: Brown coarse-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT3_0.1-0.2	21-De20679	Dec 08, 2021	Approximate Sample 116g Sample consisted of: Brown coarse-grained clayey sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT5_0.1-0.2	21-De20680	Dec 08, 2021	Approximate Sample 79g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT6_0.1-0.2	21-De20681	Dec 08, 2021	Approximate Sample 75g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 09, 2021	Indefinite

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**										
1	CPT11_0.1-0.2	Dec 08, 2021		Soil	W21-De20671	x				X	X		X		
2	CPT10_0.1-0.2	Dec 08, 2021		Soil	W21-De20672	x				X	X		X		
3	CPT10_0.4-0.5	Dec 08, 2021		Soil	W21-De20673						X		X		
4	CPT8_0.1-0.2	Dec 08, 2021		Soil	W21-De20674	X				X	X		X		
5	CPT7_0.1-0.2	Dec 08, 2021		Soil	W21-De20675	X					X		X		
6	CPT1_0.1-0.2	Dec 08, 2021		Soil	W21-De20676	X				X	X		X		
7	CPT1_1.1-1.2	Dec 08, 2021		Soil	W21-De20677						X		X		

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
8	CPT2_0.4-0.5	Dec 08, 2021		Soil	W21-De20678					X	X		X		
9	CPT3_0.1-0.2	Dec 08, 2021		Soil	W21-De20679	X		X	X	X	X	X	X		
10	CPT5_0.1-0.2	Dec 08, 2021		Soil	W21-De20680	X					X		X		
11	CPT6_0.1-0.2	Dec 08, 2021		Soil	W21-De20681	X					X		X		
12	DUP1	Dec 08, 2021		Soil	W21-De20682					X	X		X		
13	TRIP SPIKE	Dec 08, 2021		Soil	W21-De20683										X
14	TRIP BLANK	Dec 08, 2021		Soil	W21-De20684									X	
15	CPT11_0.4-0.5	Dec 08, 2021		Soil	W21-De20686		X								
16	CPT11_1.1-1.2	Dec 08, 2021		Soil	W21-De20687		X								

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Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
17	CPT10_1.1-1.2	Dec 08, 2021		Soil	W21-De20688		X								
18	CPT8_0.4-0.5	Dec 08, 2021		Soil	W21-De20689		X								
19	CPT8_1.1-1.2	Dec 08, 2021		Soil	W21-De20690		X								
20	CPT7_0.4-0.5	Dec 08, 2021		Soil	W21-De20691		X								
21	CPT7_1.1-1.2	Dec 08, 2021		Soil	W21-De20692		X								
22	CPT1_0.4-0.5	Dec 08, 2021		Soil	W21-De20693		X								
23	CPT2_0.1-0.2	Dec 08, 2021		Soil	W21-De20694		X								
24	CPT2_1.1-1.2	Dec 08, 2021		Soil	W21-De20695		X								
25	CPT3_0.4-0.5	Dec 08, 2021		Soil	W21-De20696		X								
26	CPT3_1.1-1.2	Dec 08, 2021		Soil	W21-De20697		X								

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
27	CPT5_0.4-0.5	Dec 08, 2021		Soil	W21-De20698		X								
28	CPT5_1.1-1.2	Dec 08, 2021		Soil	W21-De20699		X								
29	CPT6_0.4-0.5	Dec 08, 2021		Soil	W21-De20700		X								
30	CPT6_1.1-1.2	Dec 08, 2021		Soil	W21-De20701		X								
Test Counts						8	16	1	1	7	12	1	12	1	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

- 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.

Coffey Geotechnics Pty Ltd Chatswood
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Attention: **Matthew Locke**

Report **848454-S**
Project name ST GEORGE DRAGONS
Project ID SYDGE295047
Received Date Dec 09, 2021

Client Sample ID			CPT11_0.1-0.2	CPT10_0.1-0.2	CPT10_0.4-0.5	CPT8_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20671	W21-De20672	W21-De20673	W21-De20674
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	68	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	74	59	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	142	59	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	0.3	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	0.6	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	61	81	66	81
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			CPT11_0.1-0.2	CPT10_0.1-0.2	CPT10_0.4-0.5	CPT8_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20671	W21-De20672	W21-De20673	W21-De20674
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	142	81	85	91
p-Terphenyl-d14 (surr.)	1	%	INT	91	84	80
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	141	-	85
Tetrachloro-m-xylene (surr.)	1	%	130	76	-	73
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	< 2	< 2	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
EPN	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2

Client Sample ID			CPT11_0.1-0.2	CPT10_0.1-0.2	CPT10_0.4-0.5	CPT8_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20671	W21-De20672	W21-De20673	W21-De20674
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	< 2	< 2	-	< 2
Naled	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Omethoate	2	mg/kg	< 2	< 2	-	< 2
Phorate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	142	86	-	58
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	INT	141	-	85
Tetrachloro-m-xylene (surr.)	1	%	130	76	-	73
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	120	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	120	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	15	4.4	12	7.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	23	13	63	28
Copper	5	mg/kg	26	15	42	24
Lead	5	mg/kg	68	23	21	28
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	24	14	14	17
Zinc	5	mg/kg	120	39	35	63
% Moisture	1	%	22	16	29	22

Client Sample ID			CPT7_0.1-0.2	CPT1_0.1-0.2	CPT1_1.1-1.2	CPT2_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20675	W21-De20676	W21-De20677	W21-De20678
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89	85	109	84
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	86	82	86	95
p-Terphenyl-d14 (surr.)	1	%	88	83	78	84
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	< 0.1
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	< 0.05
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	< 0.05
a-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Aldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
b-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05

Client Sample ID			CPT7_0.1-0.2	CPT1_0.1-0.2	CPT1_1.1-1.2	CPT2_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20675	W21-De20676	W21-De20677	W21-De20678
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
d-HCH	0.05	mg/kg	-	< 0.05	-	< 0.05
Dieldrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan I	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan II	0.05	mg/kg	-	< 0.05	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	< 0.05
Endrin ketone	0.05	mg/kg	-	< 0.05	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	< 0.05
Methoxychlor	0.05	mg/kg	-	< 0.05	-	< 0.05
Toxaphene	0.5	mg/kg	-	< 0.5	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	119	-	79
Tetrachloro-m-xylene (surr.)	1	%	-	72	-	97
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Bolstar	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2
Coumaphos	2	mg/kg	-	< 2	-	< 2
Demeton-S	0.2	mg/kg	-	< 0.2	-	< 0.2
Demeton-O	0.2	mg/kg	-	< 0.2	-	< 0.2
Diazinon	0.2	mg/kg	-	< 0.2	-	< 0.2
Dichlorvos	0.2	mg/kg	-	< 0.2	-	< 0.2
Dimethoate	0.2	mg/kg	-	< 0.2	-	< 0.2
Disulfoton	0.2	mg/kg	-	< 0.2	-	< 0.2
EPN	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethion	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethoprop	0.2	mg/kg	-	< 0.2	-	< 0.2
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenitrothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fensulfothion	0.2	mg/kg	-	< 0.2	-	< 0.2
Fenthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Malathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Merphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Methyl parathion	0.2	mg/kg	-	< 0.2	-	< 0.2
Mevinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Monocrotophos	2	mg/kg	-	< 2	-	< 2
Naled	0.2	mg/kg	-	< 0.2	-	< 0.2
Omethoate	2	mg/kg	-	< 2	-	< 2
Phorate	0.2	mg/kg	-	< 0.2	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	< 0.2

Client Sample ID			CPT7_0.1-0.2	CPT1_0.1-0.2	CPT1_1.1-1.2	CPT2_0.4-0.5
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20675	W21-De20676	W21-De20677	W21-De20678
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Pyrazophos	0.2	mg/kg	-	< 0.2	-	< 0.2
Ronnel	0.2	mg/kg	-	< 0.2	-	< 0.2
Terbufos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	< 0.2
Tokuthion	0.2	mg/kg	-	< 0.2	-	< 0.2
Trichloronate	0.2	mg/kg	-	< 0.2	-	< 0.2
Triphenylphosphate (surr.)	1	%	-	74	-	89
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	< 0.1
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	< 0.1
Total PCB*	0.1	mg/kg	-	< 0.1	-	< 0.1
Dibutylchlorendate (surr.)	1	%	-	119	-	79
Tetrachloro-m-xylene (surr.)	1	%	-	72	-	97
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	8.6	5.2	< 2	6.8
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	31	28	17	32
Copper	5	mg/kg	29	25	8.2	19
Lead	5	mg/kg	46	27	7.8	11
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	31	13	6.3	7.7
Zinc	5	mg/kg	64	100	12	20
% Moisture	1	%	18	19	18	28

Client Sample ID			CPT3_0.1-0.2	CPT5_0.1-0.2	CPT6_0.1-0.2	DUP1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20679	W21-De20680	W21-De20681	W21-De20682
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50

Client Sample ID			CPT3_0.1-0.2	CPT5_0.1-0.2	CPT6_0.1-0.2	DUP1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20679	W21-De20680	W21-De20681	W21-De20682
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	75	108	76	66
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	86	92	88	91
p-Terphenyl-d14 (surr.)	1	%	81	86	84	85
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	< 0.1
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	< 0.05
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	< 0.05
a-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Aldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
b-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
d-HCH	0.05	mg/kg	< 0.05	-	-	< 0.05
Dieldrin	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan I	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan II	0.05	mg/kg	< 0.05	-	-	< 0.05
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin	0.05	mg/kg	< 0.05	-	-	< 0.05

Client Sample ID			CPT3_0.1-0.2	CPT5_0.1-0.2	CPT6_0.1-0.2	DUP1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20679	W21-De20680	W21-De20681	W21-De20682
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	< 0.05
Endrin ketone	0.05	mg/kg	< 0.05	-	-	< 0.05
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	< 0.05
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	< 0.05
Methoxychlor	0.05	mg/kg	< 0.05	-	-	< 0.05
Toxaphene	0.5	mg/kg	< 0.5	-	-	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	77	-	-	82
Tetrachloro-m-xylene (surr.)	1	%	88	-	-	94
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Bolstar	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Coumaphos	2	mg/kg	< 2	-	-	< 2
Demeton-S	0.2	mg/kg	< 0.2	-	-	< 0.2
Demeton-O	0.2	mg/kg	< 0.2	-	-	< 0.2
Diazinon	0.2	mg/kg	< 0.2	-	-	< 0.2
Dichlorvos	0.2	mg/kg	< 0.2	-	-	< 0.2
Dimethoate	0.2	mg/kg	< 0.2	-	-	< 0.2
Disulfoton	0.2	mg/kg	< 0.2	-	-	< 0.2
EPN	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethion	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethoprop	0.2	mg/kg	< 0.2	-	-	< 0.2
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenitrothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fensulfothion	0.2	mg/kg	< 0.2	-	-	< 0.2
Fenthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Malathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Merphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Methyl parathion	0.2	mg/kg	< 0.2	-	-	< 0.2
Mevinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Monocrotophos	2	mg/kg	< 2	-	-	< 2
Naled	0.2	mg/kg	< 0.2	-	-	< 0.2
Omethoate	2	mg/kg	< 2	-	-	< 2
Phorate	0.2	mg/kg	< 0.2	-	-	< 0.2
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	< 0.2
Pyrazophos	0.2	mg/kg	< 0.2	-	-	< 0.2
Ronnel	0.2	mg/kg	< 0.2	-	-	< 0.2
Terbufos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	< 0.2
Tokuthion	0.2	mg/kg	< 0.2	-	-	< 0.2
Trichloronate	0.2	mg/kg	< 0.2	-	-	< 0.2
Triphenylphosphate (surr.)	1	%	87	-	-	92

Client Sample ID			CPT3_0.1-0.2	CPT5_0.1-0.2	CPT6_0.1-0.2	DUP1
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De20679	W21-De20680	W21-De20681	W21-De20682
Date Sampled			Dec 08, 2021	Dec 08, 2021	Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit				
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	< 0.1
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	< 0.1
Total PCB*	0.1	mg/kg	< 0.1	-	-	< 0.1
Dibutylchlorendate (surr.)	1	%	77	-	-	82
Tetrachloro-m-xylene (surr.)	1	%	88	-	-	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	5.8	3.5	8.9	2.6
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	27	19	27	33
Copper	5	mg/kg	21	7.8	66	18
Lead	5	mg/kg	24	11	35	13
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	19	8.4	25	9.8
Zinc	5	mg/kg	54	13	96	19
% Moisture	1	%	16	17	20	26
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	17	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units		-	-	-
Total Organic Carbon	0.1	%		-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g		-	-	-

Client Sample ID			TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De20683	W21-De20684
Date Sampled			Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	-	< 20
BTEX				
Benzene	0.1	mg/kg	-	< 0.1
Toluene	0.1	mg/kg	-	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	86

Client Sample ID			TRIP SPIKE	TRIP BLANK
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De20683	W21-De20684
Date Sampled			Dec 08, 2021	Dec 08, 2021
Test/Reference	LOR	Unit		
TRH C6-C10	1	%	100	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5
Total Recoverable Hydrocarbons				
Naphthalene	1	%	100	-
TRH C6-C9	1	%	100	-
TRH C6-C10	20	mg/kg	-	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20
BTEX				
Benzene	1	%	100	-
Ethylbenzene	1	%	100	-
m&p-Xylenes	1	%	110	-
o-Xylene	1	%	100	-
Toluene	1	%	100	-
Xylenes - Total	1	%	100	-
4-Bromofluorobenzene (surr.)	1	%	60	-

Sample History

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

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	Dec 13, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Dec 13, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 13, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 13, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Dec 09, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Dec 16, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 16, 2021	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Dec 13, 2021	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Dec 16, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254				X			X			
Sydney Laboratory - NATA # 1261 Site # 18217	X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794										
Mayfield Laboratory - NATA # 1261 Site # 25079										
Perth Laboratory - NATA # 2377 Site # 2370										
External Laboratory										

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	CPT11_0.1-0.2	Dec 08, 2021		Soil	W21-De20671	X				X	X		X		
2	CPT10_0.1-0.2	Dec 08, 2021		Soil	W21-De20672	X				X	X		X		
3	CPT10_0.4-0.5	Dec 08, 2021		Soil	W21-De20673						X		X		
4	CPT8_0.1-0.2	Dec 08, 2021		Soil	W21-De20674	X				X	X		X		
5	CPT7_0.1-0.2	Dec 08, 2021		Soil	W21-De20675	X					X		X		
6	CPT1_0.1-0.2	Dec 08, 2021		Soil	W21-De20676	X				X	X		X		
7	CPT1_1.1-1.2	Dec 08, 2021		Soil	W21-De20677						X		X		

Date Reported:Dec 16, 2021

Date Reported:Dec 16, 2021

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
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Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
8	CPT2_0.4-0.5	Dec 08, 2021		Soil	W21-De20678					X	X		X		
9	CPT3_0.1-0.2	Dec 08, 2021		Soil	W21-De20679	X		X	X	X	X	X	X		
10	CPT5_0.1-0.2	Dec 08, 2021		Soil	W21-De20680	X					X		X		
11	CPT6_0.1-0.2	Dec 08, 2021		Soil	W21-De20681	X					X		X		
12	DUP1	Dec 08, 2021		Soil	W21-De20682					X	X		X		
13	TRIP SPIKE	Dec 08, 2021		Soil	W21-De20683										X
14	TRIP BLANK	Dec 08, 2021		Soil	W21-De20684									X	
15	LAB SPIKE	Dec 08, 2021		Soil	W21-De20685										X
16	CPT11_0.4-0.5	Dec 08, 2021		Soil	W21-De20686		X								
17	CPT11_1.1-	Dec 08, 2021		Soil	W21-De20687		X								

Date Reported:Dec 16, 2021

Date Reported:Dec 16, 2021

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

Order No.:
Report #: 848454
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
	1.2														
18	CPT10_1.1-1.2	Dec 08, 2021		Soil	W21-De20688		X								
19	CPT8_0.4-0.5	Dec 08, 2021		Soil	W21-De20689		X								
20	CPT8_1.1-1.2	Dec 08, 2021		Soil	W21-De20690		X								
21	CPT7_0.4-0.5	Dec 08, 2021		Soil	W21-De20691		X								
22	CPT7_1.1-1.2	Dec 08, 2021		Soil	W21-De20692		X								
23	CPT1_0.4-0.5	Dec 08, 2021		Soil	W21-De20693		X								
24	CPT2_0.1-0.2	Dec 08, 2021		Soil	W21-De20694		X								
25	CPT2_1.1-1.2	Dec 08, 2021		Soil	W21-De20695		X								
26	CPT3_0.4-0.5	Dec 08, 2021		Soil	W21-De20696		X								

Date Reported:Dec 16, 2021

eurofins | Environment Testing

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Project Name: ST GEORGE DRAGONS
Project ID: SYDGE295047

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Received: Dec 9, 2021 10:19 AM
Due: Dec 16, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794															
Mayfield Laboratory - NATA # 1261 Site # 25079															
Perth Laboratory - NATA # 2377 Site # 2370															
External Laboratory															
27	CPT3_1.1-1.2	Dec 08, 2021		Soil	W21-De20697		X								
28	CPT5_0.4-0.5	Dec 08, 2021		Soil	W21-De20698		X								
29	CPT5_1.1-1.2	Dec 08, 2021		Soil	W21-De20699		X								
30	CPT6_0.4-0.5	Dec 08, 2021		Soil	W21-De20700		X								
31	CPT6_1.1-1.2	Dec 08, 2021		Soil	W21-De20701		X								
Test Counts						8	16	1	1	7	12	1	12	1	2

Date Reported:Dec 16, 2021

Date Reported:Dec 16, 2021

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer, that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% Phenols & 50-150% PFASs..

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

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	83			70-130	Pass	
TRH C10-C14	%	112			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	90			70-130	Pass	
Toluene	%	85			70-130	Pass	
Ethylbenzene	%	84			70-130	Pass	
m&p-Xylenes	%	81			70-130	Pass	
o-Xylene	%	82			70-130	Pass	
Xylenes - Total*	%	81			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	93			70-130	Pass	
TRH C6-C10	%	80			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	95			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	83			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	%	97			70-130	Pass	
Benzo(g.h.i)perylene	%	106			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	89			70-130	Pass	
Dibenz(a.h)anthracene	%	98			70-130	Pass	
Fluoranthene	%	89			70-130	Pass	
Fluorene	%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	99			70-130	Pass	
Naphthalene	%	102			70-130	Pass	
Phenanthrene	%	94			70-130	Pass	
Pyrene	%	89			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	71			70-130	Pass	
4.4'-DDD	%	80			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	%	85			70-130	Pass	
4.4'-DDT	%	77			70-130	Pass	
a-HCH	%	70			70-130	Pass	
Aldrin	%	75			70-130	Pass	
b-HCH	%	78			70-130	Pass	
d-HCH	%	77			70-130	Pass	
Dieldrin	%	70			70-130	Pass	
Endosulfan I	%	75			70-130	Pass	
Endosulfan II	%	71			70-130	Pass	
Endosulfan sulphate	%	81			70-130	Pass	
Endrin	%	81			70-130	Pass	
Endrin aldehyde	%	86			70-130	Pass	
Endrin ketone	%	73			70-130	Pass	
g-HCH (Lindane)	%	79			70-130	Pass	
Heptachlor	%	110			70-130	Pass	
Heptachlor epoxide	%	71			70-130	Pass	
Hexachlorobenzene	%	76			70-130	Pass	
Methoxychlor	%	76			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	107			70-130	Pass	
Dimethoate	%	96			70-130	Pass	
Ethion	%	101			70-130	Pass	
Fenitrothion	%	93			70-130	Pass	
Methyl parathion	%	106			70-130	Pass	
Mevinphos	%	101			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	75			70-130	Pass	
Aroclor-1260	%	81			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	108			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	87			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	104			80-120	Pass	
Copper	%	86			80-120	Pass	
Lead	%	106			80-120	Pass	
Mercury	%	85			80-120	Pass	
Nickel	%	89			80-120	Pass	
Zinc	%	106			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S21-De21426	NCP	%	79			70-130	Pass	
TRH C10-C14	B21-De29487	NCP	%	101			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-De21426	NCP	%	83			70-130	Pass	
Toluene	S21-De21426	NCP	%	78			70-130	Pass	
Ethylbenzene	S21-De21426	NCP	%	81			70-130	Pass	
m&p-Xylenes	S21-De21426	NCP	%	78			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S21-De21426	NCP	%	79			70-130	Pass	
Xylenes - Total*	S21-De21426	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-De21426	NCP	%	112			70-130	Pass	
TRH C6-C10	S21-De21426	NCP	%	73			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Endrin	W21-De21236	NCP	%	97			70-130	Pass	
Heptachlor	W21-De21236	NCP	%	122			70-130	Pass	
Methoxychlor	S21-De22695	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	W21-De21236	NCP	%	95			70-130	Pass	
Methyl parathion	W21-De21236	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	B21-De29487	NCP	%	97			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	W21-De20674	CP	%	78			75-125	Pass	
Cadmium	W21-De20674	CP	%	92			75-125	Pass	
Chromium	W21-De20674	CP	%	90			75-125	Pass	
Copper	W21-De20674	CP	%	84			75-125	Pass	
Lead	W21-De20674	CP	%	77			75-125	Pass	
Mercury	W21-De20674	CP	%	83			75-125	Pass	
Nickel	W21-De20674	CP	%	81			75-125	Pass	
Zinc	W21-De20674	CP	%	102			75-125	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	W21-De20676	CP	%	90			70-130	Pass	
Acenaphthylene	W21-De20676	CP	%	89			70-130	Pass	
Anthracene	W21-De20676	CP	%	85			70-130	Pass	
Benz(a)anthracene	W21-De20676	CP	%	85			70-130	Pass	
Benzo(a)pyrene	W21-De20676	CP	%	97			70-130	Pass	
Benzo(b&j)fluoranthene	W21-De20676	CP	%	90			70-130	Pass	
Benzo(g.h.i)perylene	W21-De20676	CP	%	86			70-130	Pass	
Benzo(k)fluoranthene	W21-De20676	CP	%	102			70-130	Pass	
Chrysene	W21-De20676	CP	%	85			70-130	Pass	
Dibenz(a.h)anthracene	W21-De20676	CP	%	88			70-130	Pass	
Fluoranthene	W21-De20676	CP	%	88			70-130	Pass	
Fluorene	W21-De20676	CP	%	100			70-130	Pass	
Indeno(1.2.3-cd)pyrene	W21-De20676	CP	%	87			70-130	Pass	
Naphthalene	W21-De20676	CP	%	97			70-130	Pass	
Phenanthrene	W21-De20676	CP	%	88			70-130	Pass	
Pyrene	W21-De20676	CP	%	90			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	W21-De20676	CP	%	81			70-130	Pass	
4.4'-DDD	W21-De20676	CP	%	95			70-130	Pass	
4.4'-DDE	W21-De20676	CP	%	99			70-130	Pass	
4.4'-DDT	W21-De20676	CP	%	94			70-130	Pass	
a-HCH	W21-De20676	CP	%	73			70-130	Pass	
Aldrin	W21-De20676	CP	%	87			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
b-HCH	W21-De20676	CP	%	87			70-130	Pass	
d-HCH	W21-De20676	CP	%	88			70-130	Pass	
Dieldrin	W21-De20676	CP	%	80			70-130	Pass	
Endosulfan I	W21-De20676	CP	%	87			70-130	Pass	
Endosulfan II	W21-De20676	CP	%	82			70-130	Pass	
Endosulfan sulphate	W21-De20676	CP	%	71			70-130	Pass	
Endrin ketone	W21-De20676	CP	%	70			70-130	Pass	
g-HCH (Lindane)	W21-De20676	CP	%	88			70-130	Pass	
Heptachlor epoxide	W21-De20676	CP	%	80			70-130	Pass	
Hexachlorobenzene	W21-De20676	CP	%	80			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	W21-De20676	CP	%	119			70-130	Pass	
Fenitrothion	W21-De20676	CP	%	117			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	W21-De20676	CP	%	84			70-130	Pass	
Aroclor-1260	W21-De20676	CP	%	92			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Ethion	S21-De28414	NCP	%	128			70-130	Pass	
Mevinphos	S21-De28414	NCP	%	84			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	S21-De21425	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De21425	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-De21425	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-De21425	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-De21425	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-De21425	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-De21425	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-De21425	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-De21425	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	W21-De21248	NCP	mg/kg	2.3	< 2	20	30%	Pass	
Cadmium	W21-De21248	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	W21-De21248	NCP	mg/kg	160	95	49	30%	Fail	Q02
Copper	W21-De21248	NCP	mg/kg	56	38	38	30%	Fail	Q15
Lead	W21-De21248	NCP	mg/kg	11	30	90	30%	Fail	Q15
Mercury	W21-De21248	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	W21-De21248	NCP	mg/kg	14	5.6	83	30%	Fail	Q15
Zinc	W21-De21248	NCP	mg/kg	53	60	11	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	W21-De20672	CP	%	16	16	4.0	30%	Pass	

Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	W21-De20674	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W21-De20674	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	W21-De20674	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-De20674	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	W21-De20674	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-De20674	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Diazinon	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De20674	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De20674	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De20674	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De20674	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W21-De20674	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W21-De20674	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	W21-De20674	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	W21-De20678	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W21-De20678	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	W21-De20678	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Benzo(g.h.i)perylene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	W21-De20678	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-De20678	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-De20678	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Merphos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De20678	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De20678	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De20678	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De20678	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W21-De20678	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W21-De20678	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	W21-De20678	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M21-De36816	NCP	uS/cm	420	450	6.6	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	W21-De20682	CP	%	26	27	2.0	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
Q02	The duplicate %RPD is outside the recommended acceptance criteria. Further analysis indicates sample heterogeneity as the cause
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)

Glenn Jackson
General Manager

- 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.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke — Mobile: — Email: matthew.locke@tetratech.com
Invoices to: — Phone: — Email: delta.sarabia@tetratech.com

Project No: SYDGE295047 — Task No:
Project Name: St George — Laboratory: Eurofins
Sampler's Name: Cameron Prentice — Project Manager: Delta Sarabia
Quote number (if different to current quoted prices):
Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Analysis Request Section: Hold	NOTES
	BH4_0.1-0.2	9/12/21		Soil	J, A	~~Standard~~ Hold	✓	
	" "_0.4-0.5				J		✓	
	" "_0.9-1.0				J		✓	
	" "_1.5-1.6				J		✓	
	" "_3.0-3.1				J		✓	
	" "_4.5-4.6				J		✓	
	CPT9_0.1-0.2				J, A		✓	J = glass Jar
	" "_0.4-0.5				J		✓	A = Asbestos bag
	" "_1.1-1.2				J		✓	P = PFAS Jar
	CPT4_0.1-0.2				J, A		✓	
	" "_0.4-0.5				J		✓	
	" "_1.1-1.2				J		✓	
	CPT12_0.1-0.2				P, J, A		✓	
	" "_0.4-0.5				J		✓	
	" "_1.1-1.2				J		✓	
	CPT14_0.1-0.2	↓		↓	J, A	↓	✓	

RELINQUISHED BY

Name: Cameron Prentice — Date: 16:30 — Time: 9/12/21
Coffey
Name: — Date:
Company: — Time:

RECEIVED BY

Name: Nawrah M — Date: 9/12/21
Company: Eurofins — Time: 4:30PM
Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐ 9.6°c
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 848983

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Locke Mobile: Email: Matthew.Locke@tetratech.com

Invoices to: general.admin@Coffey.com Phone: Email: Delfa.Sarabia@tetratech.com

Project No: SYDGE245047 Task No:

Project Name: SE George Laboratory: Eurofins

Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia

Quote number (if different to current quoted prices):

Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Analysis Request Section: Hold	NOTES
	CPT14_0.4-0.5	9/12/21		Soil	J	~~Standard~~	✓	
	CPT14_1.1-1.2				J	Hold	✓	
	CPT13_0.1-0.2				J, A		✓	
	" "_0.4-0.5				J		✓	J= glass jar
	" "_1.1-1.2				J		✓	A= Asbestos bag
	CPT16_0.1-0.2				J, A		✓	P= PFAS
	" "_0.4-0.5				J		✓	
	" "_1.1-1.2				J		✓	
	CPT18_0.1-0.2				J, A		✓	
	" "_0.4-0.5				J		✓	
	" "_1.1-1.2				J		✓	
	CPT17_0.1-0.2				J, A		✓	
	" "_0.4-0.5				J		✓	
	" "_1.1-1.2				J		✓	
	CPT15_0.1-0.2				J, A		✓	
	" "_0.4-0.5	↓		↓	J	↓	✓	

RELINQUISHED BY

Name: Cameron Prentice Date: 9/12/21 →

Coffey Time: 16:30

Name: Date: →

Company: Time:

RECEIVED BY

Name: Hannah M Date: 9/12/21

Company: Eurofins Time: 4:30 PM

Name: Date:

Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐ 9.6 °C

Lab. Ref/Batch No.

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 848983

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Locke Mobile: Email: Matthew.Locke @tetratech.com

Invoices to: general.admin@Coffey.com Phone: Email: delfa.Sarabia @tetratech.com

Project No: SYDGE295047 Task No:

Project Name: St George Laboratory: Eurofins

Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia

Quote number (if different to current quoted prices):

Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Hold	NOTES
	CPT15_1.1-1.2	9/12/21		Soil	J	~~Standard~~	✓	
	RB-2			Water		Hold	✓	
	DUP2			Soil	J		✓	
	Trip2	↓		Soil	J	↓	✓	J=glass Jar

RELINQUISHED BY

Name: Cameron Prentice Date: 9/12/21 →

Coffey Time: 16:30

Name: Date: →

Company: Time:

RECEIVED BY

Name: Date: 9/12/21

Company: Eurofins Time: 4:30 PM

Name: Date:

Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐ 9.6°C

Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 848983

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke
Invoices to:

Mobile:
Phone:

Email: matthew.locke @tetratech.com
Email: delfa.sarabia @tetratech.com

Project No: SYDGE295047
Project Name: St George
Sampler's Name: Cameron Prentice
Quote number (if different to current quoted prices):
Special Instructions:

Task No:
Laboratory: Eurofins
Project Manager: Delfa Sarabia

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	[illegible]	SUITE B4 (TRH/BTEX/PAH)	SUITE M8 (METALS 8)	SUITE B15 (OCP/OPP/PCB)	ASBESTOS (DETECT)	CEC	PH	TOC	PFAS (28 compounds)					NOTES
	BH4_0.1-0.2	9/12/21		Soil	J, A	Standard Hold	✓	✓	✓	✓	✓									
	" _0.4-0.5				J		✓													
	" _0.4-1.0				J		✓	✓	✓											
	" _1.5-1.6				J		✓													
	" _3.0-3.1				J		✓													
	" _4.5-4.6				J		✓													J = glass Jar
	CPT9_0.1-0.2				J, A		✓	✓	✓											A = Asbestos bag
	" _0.4-0.5				J		✓													P = PFAS Jar
	" _1.1-1.2				J		✓													
	CPT4_0.1-0.2				J, A		✓	✓	✓											
	" _0.4-0.5				J		✓													
	" _1.1-1.2				J		✓													
	CPT12_0.1-0.2				P, J, A		✓	✓	✓	✓	✓	✓	✓	✓	✓					
	" _0.4-0.5				J		✓													
	" _1.1-1.2				J		✓													
	CPT14_0.1-0.2				J, A		✓	✓	✓											

RELINQUISHED BY		RECEIVED BY		Sample Receipt Advice: (Lab Use Only)
Name: Cameron Prentice	Date: 16:30	Name: Hannah M	Date: 9/12/21	All Samples Recieved in Good Condition ☐
Coffey	Time: 9/12/21	Company: Eurofins	Time: 4:30PM	All Documentation is in Proper Order ☐
Name:	Date:	Name:	Date:	Samples Received Properly Chilled ☐ 9.6°C
Company:	Time:	Company:	Time:	Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Recieved: 13/12/21 - 1:47PM
Temperature: 9.6°C
Hannah Mawbey

Report: 848983

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke
Invoices to: general.admin@Coffey.com
Mobile:
Phone:
Email: Matthew.Locke@tetratech.com
Email: Delta.Scrabia@tetratech.com

Project No: SYDGE245047
Project Name: St George
Sampler's Name: Cameron Prentice
Quote number (if different to current quoted prices):
Special Instructions:
Task No:
Laboratory: Eurofins
Project Manager: Delta Scrabia

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Hold	Suite B4 (PAH/TRH/BTEX)	Suite MR (METALS)	Suite B15 (OCP/OPP/PCB)	Asbestos (AS4964)	CEC	pH	TOC	PFAS (28 compounds)	NOTES
	CPT14_0.4-0.5	9/12/21		Soil	J	Standard ↑ Hold										J= glass jar A= Asbestos bag P= PFAS
	CPT14_1.1-1.2				J											
	CPT13_0.1-0.2				J,A											
	" _0.4-0.5				J											
	" _1.1-1.2				J											
	CPT16_0.1-0.2				J,A											
	" _0.4-0.5				J											
	" _1.1-1.2				J											
	CPT18_0.1-0.2				J,A											
	" _0.4-0.5				J											
	" _1.1-1.2				J											
	CPT17_0.1-0.2				J,A											
	" _0.4-0.5				J											
	" _1.1-1.2				J											
	CPT15_0.1-0.2				J,A											
	" _0.4-0.5				J											

RELINQUISHED BY

Name: Cameron Prentice
Coffey
Date: 9/12/21
Time: 15:30

Name:
Company:
Date:
Time:

RECEIVED BY

Name: Hannah M
Company: Eurofins
Date: 9/12/21
Time: 4:30 PM

Name:
Company:
Date:
Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved In Good Condition ☐
All Documentation is In Proper Order ☐
Samples Received Properly Chilled ☐ 9.6°c
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Recieved: 13/12/21 - 1:47PM
Temperature: 9.6°c
Hannah Mawbey

Report: 848983

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Charlswood
Report Results to: Matthew Locke — Mobile: — Email: matthew.locke@tetratech.com
Invoices to: generaladmin@coffey.com — Phone: — Email: delfa.sarabia@tetratech.com

Project No: SYDGE295047
Project Name: St George
Sampler's Name: Cameron Prentice
Quote number (if different to current quoted prices):
Special Instructions:

Task No:
Laboratory: Eurofins
Project Manager: Delfa Sarabia

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Metals	SUITE B4	SUITE M8	SUITE B15	ASBESTOS (DETECT)	CEC	pH	TOC	PFAS (28 analytes)	NOTES
	CPT15_1.1-1.2	9/12/21		Soil	J	Standard Hold										
	RB-1	↓		Water		↓										
	DUP2			Soil	J											
	TRIP2			Soil	J											
																SEND TO ALS

RELINQUISHED BY

Name: Cameron Prentice — Date: 9/12/21 — Time: 16:30
Coffey

Name: — Date: — Time:
Company:

RECEIVED BY

Name: Hannah M — Date: 9/12/21 — Time: 4:30PM
Company: Eurofins

Name: — Date: — Time:
Company:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐ 9.6°C
Lab. Ref/Batch No.

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Recieved: 13/12/21 - 1:47PM
Temperature: 9.6 °C
Hannah Mawbey

Report: 848983

SUITE B4 = TRH/PAH/BTEX
SUITE M8 = METALS 8

Chain of custody
Issued: 30 July 2020
UNCONTROLLED WHEN PRINTED

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www.eurofins.com.au EnviroSales@eurofins.com

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NATA # 1261 Site # 18217

Brisbane
1/21 Smallwood Place
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4/52 Industrial Drive
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NATA # 1261 Site # 25079

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IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Dec 13, 2021 1:47 PM
Eurofins reference	848983

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 9.6 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.
✓	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample TRIP2 sent to ALS as requested. RB-1- PFAS container not received.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
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NATA # 1261 Site # 1254

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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

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4/52 Industrial Drive
Mayfield East NSW 2304
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Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

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Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

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NZBN: 9429046024954

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	BH4_0.1-0.2	Dec 09, 2021		Soil	W21-De24630	X					X	X	X		X	
2	BH4_0.4-0.5	Dec 09, 2021		Soil	W21-De24631		X									
3	BH4_0.9-1.0	Dec 09, 2021		Soil	W21-De24632						X		X		X	
4	BH4_1.5-1.6	Dec 09, 2021		Soil	W21-De24633		X									
5	BH4_3.0-3.1	Dec 09, 2021		Soil	W21-De24634		X									
6	BH4_4.5-4.6	Dec 09, 2021		Soil	W21-De24635		X									
7	CPT9_0.1-0.2	Dec 09, 2021		Soil	W21-De24636						X		X		X	
8	CPT9_0.4-0.5	Dec 09, 2021		Soil	W21-De24637		X									
9	CPT9_1.1-1.2	Dec 09, 2021		Soil	W21-De24638		X									

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
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Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

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NATA # 1261 Site # 18217

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Murarrie QLD 4172
Phone : +61 7 3902 4600
NATA # 1261 Site # 20794

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Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

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Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

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Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	CPT4_0.1-0.2	Dec 09, 2021		Soil	W21-De24639						X		X		X	
11	CPT4_0.4-0.5	Dec 09, 2021		Soil	W21-De24640		X									
12	CPT4_1.1-1.2	Dec 09, 2021		Soil	W21-De24641		X									
13	CPT12_0.1-0.2	Dec 09, 2021		Soil	W21-De24642	X		X		X	X	X	X	X	X	X
14	CPT12_0.4-0.5	Dec 09, 2021		Soil	W21-De24643		X									
15	CPT12_1.1-1.2	Dec 09, 2021		Soil	W21-De24644		X									
16	CPT14_0.1-0.2	Dec 09, 2021		Soil	W21-De24645						X		X		X	
17	CPT14_0.4-	Dec 09, 2021		Soil	W21-De24646		X									

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
	0.5															
18	CPT14_1.1-1.2	Dec 09, 2021		Soil	W21-De24647		X									
19	CPT13_0.1-0.2	Dec 09, 2021		Soil	W21-De24648						X	X	X		X	
20	CPT13_0.4-0.5	Dec 09, 2021		Soil	W21-De24649		X									
21	CPT13_1.1-1.2	Dec 09, 2021		Soil	W21-De24650						X		X		X	
22	CPT16_0.1-0.2	Dec 09, 2021		Soil	W21-De24651						X		X		X	
23	CPT16_0.4-0.5	Dec 09, 2021		Soil	W21-De24652		X									

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Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
24	CPT16_1.1-1.2	Dec 09, 2021		Soil	W21-De24653		X									
25	CPT18_0.1-0.2	Dec 09, 2021		Soil	W21-De24654						X	X	X		X	
26	CPT18_0.4-0.5	Dec 09, 2021		Soil	W21-De24655		X									
27	CPT18_1.1-1.2	Dec 09, 2021		Soil	W21-De24656						X		X		X	
28	CPT17_0.1-0.2	Dec 09, 2021		Soil	W21-De24657	X			X	X	X		X	X	X	
29	CPT17_0.4-0.5	Dec 09, 2021		Soil	W21-De24658		X									
30	CPT17_1.1-	Dec 09, 2021		Soil	W21-De24659		X									

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Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
30	CPT17_1.1-1.2	Dec 09, 2021		Soil	W21-De24659											
31	CPT15_0.1-0.2	Dec 09, 2021		Soil	W21-De24660						X		X		X	
32	CPT15_0.4-0.5	Dec 09, 2021		Soil	W21-De24661		X									
33	CPT15_1.1-1.2	Dec 09, 2021		Soil	W21-De24662						X		X		X	
34	RB-1	Dec 09, 2021		Water	W21-De24663						X	X			X	
35	DUP2	Dec 09, 2021		Soil	W21-De24664						X		X		X	
Test Counts						3	19	2	2	2	16	5	15	2	16	1

Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Matthew Locke
Report	848983-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Dec 13, 2021
Date Reported	Jan 04, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Dec 09, 2021
Report 848983-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH4_0.1-0.2	21-De24630	Dec 09, 2021	Approximate Sample 132g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT12_0.1-0.2	21-De24642	Dec 09, 2021	Approximate Sample 83g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.
CPT17_0.1-0.2	21-De24657	Dec 09, 2021	Approximate Sample 139g Sample consisted of: Brown coarse-grained clayey sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 13, 2021	Indefinite

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Received: Dec 13, 2021 1:47 PM
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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	BH4_0.1-0.2	Dec 09, 2021		Soil	W21-De24630	X					X	X	X		X	
2	BH4_0.4-0.5	Dec 09, 2021		Soil	W21-De24631		X									
3	BH4_0.9-1.0	Dec 09, 2021		Soil	W21-De24632						X		X		X	
4	BH4_1.5-1.6	Dec 09, 2021		Soil	W21-De24633		X									
5	BH4_3.0-3.1	Dec 09, 2021		Soil	W21-De24634		X									
6	BH4_4.5-4.6	Dec 09, 2021		Soil	W21-De24635		X									
7	CPT9_0.1-0.2	Dec 09, 2021		Soil	W21-De24636						X		X		X	
8	CPT9_0.4-0.5	Dec 09, 2021		Soil	W21-De24637		X									
9	CPT9_1.1-1.2	Dec 09, 2021		Soil	W21-De24638		X									

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Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	CPT4_0.1-0.2	Dec 09, 2021		Soil	W21-De24639						X		X		X	
11	CPT4_0.4-0.5	Dec 09, 2021		Soil	W21-De24640		X									
12	CPT4_1.1-1.2	Dec 09, 2021		Soil	W21-De24641		X									
13	CPT12_0.1-0.2	Dec 09, 2021		Soil	W21-De24642	X		X		X	X	X	X	X	X	X
14	CPT12_0.4-0.5	Dec 09, 2021		Soil	W21-De24643		X									
15	CPT12_1.1-1.2	Dec 09, 2021		Soil	W21-De24644		X									
16	CPT14_0.1-0.2	Dec 09, 2021		Soil	W21-De24645						X		X		X	
17	CPT14_0.4-	Dec 09, 2021		Soil	W21-De24646		X									

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Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
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	0.5															
18	CPT14_1.1-1.2	Dec 09, 2021		Soil	W21-De24647		X									
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23	CPT16_0.4-0.5	Dec 09, 2021		Soil	W21-De24652		X									

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 29, 2021
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
24	CPT16_1.1-1.2	Dec 09, 2021		Soil	W21-De24653		X									
25	CPT18_0.1-0.2	Dec 09, 2021		Soil	W21-De24654						X	X	X		X	
26	CPT18_0.4-0.5	Dec 09, 2021		Soil	W21-De24655		X									
27	CPT18_1.1-1.2	Dec 09, 2021		Soil	W21-De24656						X		X		X	
28	CPT17_0.1-0.2	Dec 09, 2021		Soil	W21-De24657	X			X	X	X		X	X	X	
29	CPT17_0.4-0.5	Dec 09, 2021		Soil	W21-De24658		X									
30	CPT17_1.1-	Dec 09, 2021		Soil	W21-De24659		X									

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
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Received: Dec 13, 2021 1:47 PM
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Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
30	CPT17_1.1-1.2	Dec 09, 2021		Soil	W21-De24659											
31	CPT15_0.1-0.2	Dec 09, 2021		Soil	W21-De24660						X		X		X	
32	CPT15_0.4-0.5	Dec 09, 2021		Soil	W21-De24661		X									
33	CPT15_1.1-1.2	Dec 09, 2021		Soil	W21-De24662						X		X		X	
34	RB-1	Dec 09, 2021		Water	W21-De24663						X	X			X	
35	DUP2	Dec 09, 2021		Soil	W21-De24664						X		X		X	
Test Counts						3	19	2	2	2	16	5	15	2	16	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

De24642, De24657: The sample received was not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-sample to be analysed accurately represented the sample received.

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **848983-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 13, 2021

Client Sample ID			BH4_0.1-0.2	BH4_0.9-1.0	CPT9_0.1-0.2	CPT4_0.1-0.2
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**W21-De24630**	**W21-De24632**	**W21-De24636**	**W21-De24639**
Date Sampled			**Dec 09, 2021**	**Dec 09, 2021**	**Dec 09, 2021**	**Dec 09, 2021**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	90	123	88	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH4_0.1-0.2	BH4_0.9-1.0	CPT9_0.1-0.2	CPT4_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24630	W21-De24632	W21-De24636	W21-De24639
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	94	98	96	95
p-Terphenyl-d14 (surr.)	1	%	103	109	106	104
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	-	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	-	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	-	-
a-HCH	0.05	mg/kg	< 0.05	-	-	-
Aldrin	0.05	mg/kg	< 0.05	-	-	-
b-HCH	0.05	mg/kg	< 0.05	-	-	-
d-HCH	0.05	mg/kg	< 0.05	-	-	-
Dieldrin	0.05	mg/kg	< 0.05	-	-	-
Endosulfan I	0.05	mg/kg	< 0.05	-	-	-
Endosulfan II	0.05	mg/kg	< 0.05	-	-	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	-	-
Endrin	0.05	mg/kg	< 0.05	-	-	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	-	-
Endrin ketone	0.05	mg/kg	< 0.05	-	-	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	-	-
Heptachlor	0.05	mg/kg	< 0.05	-	-	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	-	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	-	-
Methoxychlor	0.05	mg/kg	< 0.05	-	-	-
Toxaphene	0.5	mg/kg	< 0.5	-	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	94	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	98	-	-	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Bolstar	0.2	mg/kg	< 0.2	-	-	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	-	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	-	-
Coumaphos	2	mg/kg	< 2	-	-	-
Demeton-S	0.2	mg/kg	< 0.2	-	-	-
Demeton-O	0.2	mg/kg	< 0.2	-	-	-
Diazinon	0.2	mg/kg	< 0.2	-	-	-
Dichlorvos	0.2	mg/kg	< 0.2	-	-	-
Dimethoate	0.2	mg/kg	< 0.2	-	-	-
Disulfoton	0.2	mg/kg	< 0.2	-	-	-
EPN	0.2	mg/kg	< 0.2	-	-	-
Ethion	0.2	mg/kg	< 0.2	-	-	-

Client Sample ID			BH4_0.1-0.2	BH4_0.9-1.0	CPT9_0.1-0.2	CPT4_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24630	W21-De24632	W21-De24636	W21-De24639
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethoprop	0.2	mg/kg	< 0.2	-	-	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	-	-
Fenitrothion	0.2	mg/kg	< 0.2	-	-	-
Fensulfothion	0.2	mg/kg	< 0.2	-	-	-
Fenthion	0.2	mg/kg	< 0.2	-	-	-
Malathion	0.2	mg/kg	< 0.2	-	-	-
Merphos	0.2	mg/kg	< 0.2	-	-	-
Methyl parathion	0.2	mg/kg	< 0.2	-	-	-
Mevinphos	0.2	mg/kg	< 0.2	-	-	-
Monocrotophos	2	mg/kg	< 2	-	-	-
Naled	0.2	mg/kg	< 0.2	-	-	-
Omethoate	2	mg/kg	< 2	-	-	-
Phorate	0.2	mg/kg	< 0.2	-	-	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	-	-
Pyrazophos	0.2	mg/kg	< 0.2	-	-	-
Ronnel	0.2	mg/kg	< 0.2	-	-	-
Terbufos	0.2	mg/kg	< 0.2	-	-	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	-	-
Tokuthion	0.2	mg/kg	< 0.2	-	-	-
Trichloronate	0.2	mg/kg	< 0.2	-	-	-
Triphenylphosphate (surr.)	1	%	104	-	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	-	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	-	-
Total PCB*	0.1	mg/kg	< 0.1	-	-	-
Dibutylchlorendate (surr.)	1	%	94	-	-	-
Tetrachloro-m-xylene (surr.)	1	%	98	-	-	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	< 2	3.0	3.6	3.9
Cadmium	0.4	mg/kg	0.8	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	12	9.5	19	13
Copper	5	mg/kg	< 5	13	15	77
Lead	5	mg/kg	4000	18	8.4	61
Mercury	0.1	mg/kg	0.5	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	5.5	6.0	7.5
Zinc	5	mg/kg	3400	45	15	75
% Moisture	1	%	23	18	18	26

Client Sample ID			CPT12_0.1-0.2	CPT14_0.1-0.2	CPT13_0.1-0.2	CPT13_1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24642	W21-De24645	W21-De24648	W21-De24650
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	92	89	81	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	107	86	91	92
p-Terphenyl-d14 (surr.)	1	%	122	93	102	101
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-

Client Sample ID			CPT12_0.1-0.2	CPT14_0.1-0.2	CPT13_0.1-0.2	CPT13_1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24642	W21-De24645	W21-De24648	W21-De24650
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Organochlorine Pesticides						
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	102	-	91	-
Tetrachloro-m-xylene (surr.)	1	%	112	-	96	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-

Client Sample ID			CPT12_0.1-0.2	CPT14_0.1-0.2	CPT13_0.1-0.2	CPT13_1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24642	W21-De24645	W21-De24648	W21-De24650
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	104	-	97	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	102	-	91	-
Tetrachloro-m-xylene (surr.)	1	%	112	-	96	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	4.2	4.3	6.1	14
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	16	13	16	20
Copper	5	mg/kg	20	8.5	14	32
Lead	5	mg/kg	19	12	18	16
Mercury	0.1	mg/kg	0.3	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	15	5.8	13	< 5
Zinc	5	mg/kg	47	18	13	64
% Moisture	1	%	18	18	25	19
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	32	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	7.4	-	-	-
Total Organic Carbon	0.1	%	13	-	-	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	9.1	-	-	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-	-	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-	-	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-	-	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-	-	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-	-	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-	-	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-	-	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-	-	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-	-	-

Client Sample ID			CPT12_0.1-0.2	CPT14_0.1-0.2	CPT13_0.1-0.2	CPT13_1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24642	W21-De24645	W21-De24648	W21-De24650
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-	-	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-	-	-
13C4-PFBA (surr.)	1	%	98	-	-	-
13C5-PFPeA (surr.)	1	%	105	-	-	-
13C5-PFHxA (surr.)	1	%	105	-	-	-
13C4-PFHpA (surr.)	1	%	96	-	-	-
13C8-PFOA (surr.)	1	%	108	-	-	-
13C5-PFNA (surr.)	1	%	124	-	-	-
13C6-PFDA (surr.)	1	%	126	-	-	-
13C2-PFUnDA (surr.)	1	%	135	-	-	-
13C2-PFDoDA (surr.)	1	%	140	-	-	-
13C2-PFTeDA (surr.)	1	%	110	-	-	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-	-	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-	-	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-	-	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-	-	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-	-	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-	-	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-	-	-
13C8-FOSA (surr.)	1	%	84	-	-	-
D3-N-MeFOSA (surr.)	1	%	96	-	-	-
D5-N-EtFOSA (surr.)	1	%	93	-	-	-
D7-N-MeFOSE (surr.)	1	%	93	-	-	-
D9-N-EtFOSE (surr.)	1	%	86	-	-	-
D5-N-EtFOSAA (surr.)	1	%	111	-	-	-
D3-N-MeFOSAA (surr.)	1	%	90	-	-	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-	-	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-	-	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-	-	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-	-	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	-	-	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-	-	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	-	-	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-	-	-
13C3-PFBS (surr.)	1	%	100	-	-	-
18O2-PFHxS (surr.)	1	%	103	-	-	-
13C8-PFOS (surr.)	1	%	104	-	-	-

Client Sample ID			CPT12_0.1-0.2	CPT14_0.1-0.2	CPT13_0.1-0.2	CPT13_1.1-1.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24642	W21-De24645	W21-De24648	W21-De24650
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-	-	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-	-	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-	-	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-	-	-
13C2-4:2 FTSA (surr.)	1	%	97	-	-	-
13C2-6:2 FTSA (surr.)	1	%	72	-	-	-
13C2-8:2 FTSA (surr.)	1	%	97	-	-	-
13C2-10:2 FTSA (surr.)	1	%	86	-	-	-
PFASs Summations						
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-	-	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-	-	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-	-	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-	-	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	-	-	-

Client Sample ID			CPT16_0.1-0.2	CPT18_0.1-0.2	CPT18_1.1-1.2	CPT17_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24651	W21-De24654	W21-De24656	W21-De24657
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	97	143	103	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			CPT16_0.1-0.2	CPT18_0.1-0.2	CPT18_1.1-1.2	CPT17_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24651	W21-De24654	W21-De24656	W21-De24657
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	95	103	94	91
p-Terphenyl-d14 (surr.)	1	%	107	116	108	104
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	< 0.1	-	-
4.4'-DDD	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDE	0.05	mg/kg	-	< 0.05	-	-
4.4'-DDT	0.05	mg/kg	-	< 0.05	-	-
a-HCH	0.05	mg/kg	-	< 0.05	-	-
Aldrin	0.05	mg/kg	-	< 0.05	-	-
b-HCH	0.05	mg/kg	-	< 0.05	-	-
d-HCH	0.05	mg/kg	-	< 0.05	-	-
Dieldrin	0.05	mg/kg	-	< 0.05	-	-
Endosulfan I	0.05	mg/kg	-	< 0.05	-	-
Endosulfan II	0.05	mg/kg	-	< 0.05	-	-
Endosulfan sulphate	0.05	mg/kg	-	< 0.05	-	-
Endrin	0.05	mg/kg	-	< 0.05	-	-
Endrin aldehyde	0.05	mg/kg	-	< 0.05	-	-
Endrin ketone	0.05	mg/kg	-	< 0.05	-	-
g-HCH (Lindane)	0.05	mg/kg	-	< 0.05	-	-
Heptachlor	0.05	mg/kg	-	< 0.05	-	-
Heptachlor epoxide	0.05	mg/kg	-	< 0.05	-	-
Hexachlorobenzene	0.05	mg/kg	-	< 0.05	-	-
Methoxychlor	0.05	mg/kg	-	< 0.05	-	-
Toxaphene	0.5	mg/kg	-	< 0.5	-	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	< 0.05	-	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	< 0.05	-	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	100	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	107	-	-

Client Sample ID			CPT16_0.1-0.2	CPT18_0.1-0.2	CPT18_1.1-1.2	CPT17_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24651	W21-De24654	W21-De24656	W21-De24657
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Bolstar	0.2	mg/kg	-	< 0.2	-	-
Chlorfenvinphos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos	0.2	mg/kg	-	< 0.2	-	-
Chlorpyrifos-methyl	0.2	mg/kg	-	< 0.2	-	-
Coumaphos	2	mg/kg	-	< 2	-	-
Demeton-S	0.2	mg/kg	-	< 0.2	-	-
Demeton-O	0.2	mg/kg	-	< 0.2	-	-
Diazinon	0.2	mg/kg	-	< 0.2	-	-
Dichlorvos	0.2	mg/kg	-	< 0.2	-	-
Dimethoate	0.2	mg/kg	-	< 0.2	-	-
Disulfoton	0.2	mg/kg	-	< 0.2	-	-
EPN	0.2	mg/kg	-	< 0.2	-	-
Ethion	0.2	mg/kg	-	< 0.2	-	-
Ethoprop	0.2	mg/kg	-	< 0.2	-	-
Ethyl parathion	0.2	mg/kg	-	< 0.2	-	-
Fenitrothion	0.2	mg/kg	-	< 0.2	-	-
Fensulfothion	0.2	mg/kg	-	< 0.2	-	-
Fenthion	0.2	mg/kg	-	< 0.2	-	-
Malathion	0.2	mg/kg	-	< 0.2	-	-
Merphos	0.2	mg/kg	-	< 0.2	-	-
Methyl parathion	0.2	mg/kg	-	< 0.2	-	-
Mevinphos	0.2	mg/kg	-	< 0.2	-	-
Monocrotophos	2	mg/kg	-	< 2	-	-
Naled	0.2	mg/kg	-	< 0.2	-	-
Omethoate	2	mg/kg	-	< 2	-	-
Phorate	0.2	mg/kg	-	< 0.2	-	-
Pirimiphos-methyl	0.2	mg/kg	-	< 0.2	-	-
Pyrazophos	0.2	mg/kg	-	< 0.2	-	-
Ronnel	0.2	mg/kg	-	< 0.2	-	-
Terbufos	0.2	mg/kg	-	< 0.2	-	-
Tetrachlorvinphos	0.2	mg/kg	-	< 0.2	-	-
Tokuthion	0.2	mg/kg	-	< 0.2	-	-
Trichloronate	0.2	mg/kg	-	< 0.2	-	-
Triphenylphosphate (surr.)	1	%	-	112	-	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1221	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1232	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1242	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1248	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1254	0.1	mg/kg	-	< 0.1	-	-
Aroclor-1260	0.1	mg/kg	-	< 0.1	-	-
Total PCB*	0.1	mg/kg	-	< 0.1	-	-
Dibutylchlorendate (surr.)	1	%	-	100	-	-
Tetrachloro-m-xylene (surr.)	1	%	-	107	-	-

Client Sample ID			CPT16_0.1-0.2	CPT18_0.1-0.2	CPT18_1.1-1.2	CPT17_0.1-0.2
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De24651	W21-De24654	W21-De24656	W21-De24657
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
Metals M8						
Arsenic	2	mg/kg	3.4	7.6	4.1	< 2
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	22	22	15	17
Copper	5	mg/kg	18	21	11	9.1
Lead	5	mg/kg	11	25	13	6.1
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	13	10	< 5
Zinc	5	mg/kg	13	75	22	9.2
% Moisture	1	%	17	17	17	10
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	-	88
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	-	8.2
Total Organic Carbon	0.1	%	-	-	-	0.8
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	-	14

Client Sample ID			CPT15_0.1-0.2	CPT15_1.1-1.2	DUP2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			W21-De24660	W21-De24662	W21-De24664
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	93	100	104
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20

Client Sample ID			CPT15_0.1-0.2	CPT15_1.1-1.2	DUP2
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			W21-De24660	W21-De24662	W21-De24664
Date Sampled			Dec 09, 2021	Dec 09, 2021	Dec 09, 2021
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	111	96	99
p-Terphenyl-d14 (surr.)	1	%	116	109	114
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100
Metals M8					
Arsenic	2	mg/kg	2.9	3.2	3.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	8.8	< 5	34
Copper	5	mg/kg	26	16	17
Lead	5	mg/kg	7.0	8.9	8.5
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	< 5	< 5	5.6
Zinc	5	mg/kg	26	56	12
% Moisture	1	%	8.3	17	18

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 14, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Dec 14, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Dec 14, 2021	7 Days
- Method: LTM-GEN-7090 pH in soil by ISE			
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Dec 23, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
% Moisture	Sydney	Dec 13, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Dec 22, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 22, 2021	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Dec 16, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Dec 16, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Dec 16, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Dec 16, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**											
1	BH4_0.1-0.2	Dec 09, 2021		Soil	W21-De24630	X					X	X	X		X	
2	BH4_0.4-0.5	Dec 09, 2021		Soil	W21-De24631		X									
3	BH4_0.9-1.0	Dec 09, 2021		Soil	W21-De24632						X		X		X	
4	BH4_1.5-1.6	Dec 09, 2021		Soil	W21-De24633		X									
5	BH4_3.0-3.1	Dec 09, 2021		Soil	W21-De24634		X									
6	BH4_4.5-4.6	Dec 09, 2021		Soil	W21-De24635		X									
7	CPT9_0.1-0.2	Dec 09, 2021		Soil	W21-De24636						X		X		X	
8	CPT9_0.4-0.5	Dec 09, 2021		Soil	W21-De24637		X									
9	CPT9_1.1-1.2	Dec 09, 2021		Soil	W21-De24638		X									

Date Reported:Jan 04, 2022

Date Reported:Jan 04, 2022

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Project Name: ST GEORGE
Project ID: SYDGE295047

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Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	CPT4_0.1-0.2	Dec 09, 2021		Soil	W21-De24639						X		X		X	
11	CPT4_0.4-0.5	Dec 09, 2021		Soil	W21-De24640		X									
12	CPT4_1.1-1.2	Dec 09, 2021		Soil	W21-De24641		X									
13	CPT12_0.1-0.2	Dec 09, 2021		Soil	W21-De24642	X		X		X	X	X	X	X	X	X
14	CPT12_0.4-0.5	Dec 09, 2021		Soil	W21-De24643		X									
15	CPT12_1.1-1.2	Dec 09, 2021		Soil	W21-De24644		X									
16	CPT14_0.1-0.2	Dec 09, 2021		Soil	W21-De24645						X		X		X	
17	CPT14_0.4-	Dec 09, 2021		Soil	W21-De24646		X									

Date Reported:Jan 04, 2022

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
	0.5															
18	CPT14_1.1-1.2	Dec 09, 2021		Soil	W21-De24647		X									
19	CPT13_0.1-0.2	Dec 09, 2021		Soil	W21-De24648						X	X	X		X	
20	CPT13_0.4-0.5	Dec 09, 2021		Soil	W21-De24649		X									
21	CPT13_1.1-1.2	Dec 09, 2021		Soil	W21-De24650						X		X		X	
22	CPT16_0.1-0.2	Dec 09, 2021		Soil	W21-De24651						X		X		X	
23	CPT16_0.4-0.5	Dec 09, 2021		Soil	W21-De24652		X									

Date Reported:Jan 04, 2022

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
24	CPT16_1.1-1.2	Dec 09, 2021		Soil	W21-De24653		X									
25	CPT18_0.1-0.2	Dec 09, 2021		Soil	W21-De24654						X	X	X		X	
26	CPT18_0.4-0.5	Dec 09, 2021		Soil	W21-De24655		X									
27	CPT18_1.1-1.2	Dec 09, 2021		Soil	W21-De24656						X		X		X	
28	CPT17_0.1-0.2	Dec 09, 2021		Soil	W21-De24657	X			X	X	X		X	X	X	
29	CPT17_0.4-0.5	Dec 09, 2021		Soil	W21-De24658		X									
30	CPT17_1.1-	Dec 09, 2021		Soil	W21-De24659		X									

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
30	CPT17_1.1-1.2	Dec 09, 2021		Soil	W21-De24659											
31	CPT15_0.1-0.2	Dec 09, 2021		Soil	W21-De24660						X		X		X	
32	CPT15_0.4-0.5	Dec 09, 2021		Soil	W21-De24661		X									
33	CPT15_1.1-1.2	Dec 09, 2021		Soil	W21-De24662						X		X		X	
34	RB-1	Dec 09, 2021		Water	W21-De24663						X	X			X	
35	DUP2	Dec 09, 2021		Soil	W21-De24664						X		X		X	
Test Counts						3	19	2	2	2	16	5	15	2	16	1

Date Reported:Jan 04, 2022

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C10-C14	%	101			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	99			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	95			80-120	Pass	
Cadmium	%	94			80-120	Pass	
Chromium	%	92			80-120	Pass	
Copper	%	95			80-120	Pass	
Lead	%	91			80-120	Pass	
Mercury	%	100			80-120	Pass	
Nickel	%	94			80-120	Pass	
Zinc	%	94			80-120	Pass	
LCS - % Recovery							
Total Organic Carbon	%	98			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	W21-De24630	CP	%	83			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	W21-De24630	CP	%	86			70-130	Pass	
Toluene	W21-De24630	CP	%	81			70-130	Pass	
Ethylbenzene	W21-De24630	CP	%	79			70-130	Pass	
m&p-Xylenes	W21-De24630	CP	%	82			70-130	Pass	
o-Xylene	W21-De24630	CP	%	81			70-130	Pass	
Xylenes - Total*	W21-De24630	CP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-De31359	NCP	%	82			70-130	Pass	
TRH C6-C10	S21-De31359	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De29079	NCP	%	105			70-130	Pass	
Acenaphthylene	S21-De29079	NCP	%	113			70-130	Pass	
Anthracene	S21-De29079	NCP	%	110			70-130	Pass	
Benz(a)anthracene	S21-De29079	NCP	%	105			70-130	Pass	
Benzo(a)pyrene	S21-De29079	NCP	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De29079	NCP	%	97			70-130	Pass	
Benzo(g.h.i)perylene	S21-De29079	NCP	%	107			70-130	Pass	
Benzo(k)fluoranthene	S21-De29079	NCP	%	117			70-130	Pass	
Chrysene	S21-De29079	NCP	%	79			70-130	Pass	
Dibenz(a.h)anthracene	S21-De29079	NCP	%	120			70-130	Pass	
Fluoranthene	S21-De29079	NCP	%	108			70-130	Pass	
Fluorene	S21-De29079	NCP	%	113			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De29079	NCP	%	117			70-130	Pass	
Naphthalene	S21-De29079	NCP	%	108			70-130	Pass	
Phenanthrene	S21-De29079	NCP	%	99			70-130	Pass	
Pyrene	S21-De29079	NCP	%	107			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-De29079	NCP	%	104			70-130	Pass	
4.4'-DDD	S21-De29079	NCP	%	103			70-130	Pass	
4.4'-DDE	S21-De29079	NCP	%	106			70-130	Pass	
4.4'-DDT	S21-De29079	NCP	%	97			70-130	Pass	
a-HCH	S21-De29079	NCP	%	107			70-130	Pass	
Aldrin	S21-De29079	NCP	%	102			70-130	Pass	
b-HCH	S21-De29079	NCP	%	101			70-130	Pass	
d-HCH	S21-De29079	NCP	%	94			70-130	Pass	
Dieldrin	S21-De29079	NCP	%	109			70-130	Pass	
Endosulfan I	S21-De29079	NCP	%	106			70-130	Pass	
Endosulfan II	S21-De29079	NCP	%	102			70-130	Pass	
Endosulfan sulphate	S21-De29079	NCP	%	85			70-130	Pass	
Endrin	S21-De29079	NCP	%	92			70-130	Pass	
Endrin aldehyde	S21-De29079	NCP	%	96			70-130	Pass	
Endrin ketone	S21-De29079	NCP	%	107			70-130	Pass	
g-HCH (Lindane)	S21-De29079	NCP	%	108			70-130	Pass	
Heptachlor	S21-De29079	NCP	%	118			70-130	Pass	
Heptachlor epoxide	S21-De29079	NCP	%	103			70-130	Pass	
Hexachlorobenzene	S21-De29079	NCP	%	104			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Methoxychlor	S21-De29079	NCP	%	109			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-De34891	NCP	%	107			70-130	Pass	
Ethion	S21-De34891	NCP	%	111			70-130	Pass	
Fenitrothion	S21-De34891	NCP	%	107			70-130	Pass	
Methyl parathion	S21-De34891	NCP	%	124			70-130	Pass	
Mevinphos	S21-De34891	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-De29079	NCP	%	92			70-130	Pass	
Aroclor-1260	S21-De29079	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S21-De38362	NCP	%	84			75-125	Pass	
Cadmium	S21-De38362	NCP	%	87			75-125	Pass	
Chromium	S21-De38362	NCP	%	80			75-125	Pass	
Copper	S21-De37851	NCP	%	100			75-125	Pass	
Lead	S21-De37851	NCP	%	101			75-125	Pass	
Mercury	S21-De38362	NCP	%	85			75-125	Pass	
Nickel	S21-De38362	NCP	%	82			75-125	Pass	
Zinc	S21-De37851	NCP	%	117			75-125	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	W21-De24632	CP	%	109			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	W21-De24632	CP	%	108			70-130	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S21-De26303	NCP	%	92			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S21-De26303	NCP	%	88			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S21-De26303	NCP	%	86			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S21-De26303	NCP	%	91			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S21-De26303	NCP	%	92			50-150	Pass	
Perfluorononanoic acid (PFNA)	S21-De26303	NCP	%	93			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S21-De26303	NCP	%	96			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S21-De26303	NCP	%	96			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S21-De26303	NCP	%	91			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S21-De26303	NCP	%	88			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S21-De26303	NCP	%	93			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S21-De26303	NCP	%	99			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S21-De26303	NCP	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S21-De26303	NCP	%	91			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S21-De26303	NCP	%	97			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S21-De26303	NCP	%	64			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S21-De26303	NCP	%	89			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S21-De26303	NCP	%	91			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S21-De26303	NCP	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S21-De26303	NCP	%	88			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S21-De26303	NCP	%	92			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S21-De26303	NCP	%	81			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S21-De26303	NCP	%	98			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S21-De26303	NCP	%	99			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S21-De26303	NCP	%	85			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S21-De26303	NCP	%	88			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S21-De26303	NCP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S21-De26303	NCP	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S21-De26303	NCP	%	92			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S21-De26303	NCP	%	94			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	W21-De24630	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W21-De24630	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	W21-De24630	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Phenanthrene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	W21-De24630	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-De24630	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-De27659	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-De24630	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De24630	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De24630	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Pirimiphos-methyl	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De24630	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De24630	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W21-De24630	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W21-De24630	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	W21-De24630	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	W21-De24630	CP	%	23	23	2.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M21-De29642	NCP	uS/cm	25	30	18	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	M21-De31057	NCP	meq/100g	7.9	6.6	19	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	L21-De25401	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	L21-De25401	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	L21-De25401	NCP	ug/kg	35	36	1.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	L21-De25401	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	L21-De25401	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	W21-De24645	CP	mg/kg	4.3	6.2	36	30%	Fail	Q15
Cadmium	W21-De24645	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	W21-De24645	CP	mg/kg	13	15	11	30%	Pass	
Copper	W21-De24645	CP	mg/kg	8.5	13	39	30%	Fail	Q15
Lead	W21-De24645	CP	mg/kg	12	19	45	30%	Fail	Q15
Mercury	W21-De24645	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	W21-De24645	CP	mg/kg	5.8	12	73	30%	Fail	Q15
Zinc	W21-De24645	CP	mg/kg	18	14	22	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	W21-De24650	CP	mg/kg	< 20	< 20	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	W21-De24650	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	W21-De24650	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	W21-De24650	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-De24650	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-De24650	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De24650	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De24650	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De24650	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De24650	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	W21-De24656	CP	%	17	17	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
pH (1:5 Aqueous extract at 25°C as rec.)	S21-De41648	NCP	pH Units	7.0	7.0	<1	30%	Pass	
Total Organic Carbon	W21-De24657	CP	%	0.8	1.1	24	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Sarah McCallion	Senior Analyst-PFAS (QLD)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **848983-W**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 13, 2021

Client Sample ID			**RB-1**
Sample Matrix			**Water**
Eurofins Sample No.			**W21-De24663**
Date Sampled			**Dec 09, 2021**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
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	%	92
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001

Client Sample ID			RB-1
Sample Matrix			Water
Eurofins Sample No.			W21-De24663
Date Sampled			Dec 09, 2021
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	77
p-Terphenyl-d14 (surr.)	1	%	108
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	97
Tetrachloro-m-xylene (surr.)	1	%	95
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002

Client Sample ID			RB-1
Sample Matrix			Water
Eurofins Sample No.			W21-De24663
Date Sampled			Dec 09, 2021
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	97
Polychlorinated Biphenyls			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB*	0.005	mg/L	< 0.005
Dibutylchlorendate (surr.)	1	%	97
Tetrachloro-m-xylene (surr.)	1	%	95
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Metals M8			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 14, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 14, 2021	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Dec 14, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			

eurofins | Environment Testing

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254			X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217	X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794											X
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											

No	Sample ID	Sample Date	Sampling Time	Matrix	LAB ID									
1	BH4_0.1-0.2	Dec 09, 2021		Soil	W21-De24630	X					X	X	X		X	
2	BH4_0.4-0.5	Dec 09, 2021		Soil	W21-De24631		X									
3	BH4_0.9-1.0	Dec 09, 2021		Soil	W21-De24632						X		X		X	
4	BH4_1.5-1.6	Dec 09, 2021		Soil	W21-De24633		X									
5	BH4_3.0-3.1	Dec 09, 2021		Soil	W21-De24634		X									
6	BH4_4.5-4.6	Dec 09, 2021		Soil	W21-De24635		X									
7	CPT9_0.1-0.2	Dec 09, 2021		Soil	W21-De24636						X		X		X	
8	CPT9_0.4-0.5	Dec 09, 2021		Soil	W21-De24637		X									
9	CPT9_1.1-1.2	Dec 09, 2021		Soil	W21-De24638		X									

Date Reported:Jan 04, 2022

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 848983
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 1:47 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
10	CPT4_0.1-0.2	Dec 09, 2021		Soil	W21-De24639						X		X		X	
11	CPT4_0.4-0.5	Dec 09, 2021		Soil	W21-De24640		X									
12	CPT4_1.1-1.2	Dec 09, 2021		Soil	W21-De24641		X									
13	CPT12_0.1-0.2	Dec 09, 2021		Soil	W21-De24642	X		X		X	X	X	X	X	X	X
14	CPT12_0.4-0.5	Dec 09, 2021		Soil	W21-De24643		X									
15	CPT12_1.1-1.2	Dec 09, 2021		Soil	W21-De24644		X									
16	CPT14_0.1-0.2	Dec 09, 2021		Soil	W21-De24645						X		X		X	
17	CPT14_0.4-	Dec 09, 2021		Soil	W21-De24646		X									

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Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
	0.5															
18	CPT14_1.1-1.2	Dec 09, 2021		Soil	W21-De24647		X									
19	CPT13_0.1-0.2	Dec 09, 2021		Soil	W21-De24648						X	X	X		X	
20	CPT13_0.4-0.5	Dec 09, 2021		Soil	W21-De24649		X									
21	CPT13_1.1-1.2	Dec 09, 2021		Soil	W21-De24650						X		X		X	
22	CPT16_0.1-0.2	Dec 09, 2021		Soil	W21-De24651						X		X		X	
23	CPT16_0.4-0.5	Dec 09, 2021		Soil	W21-De24652		X									

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
24	CPT16_1.1-1.2	Dec 09, 2021		Soil	W21-De24653		X									
25	CPT18_0.1-0.2	Dec 09, 2021		Soil	W21-De24654						X	X	X		X	
26	CPT18_0.4-0.5	Dec 09, 2021		Soil	W21-De24655		X									
27	CPT18_1.1-1.2	Dec 09, 2021		Soil	W21-De24656						X		X		X	
28	CPT17_0.1-0.2	Dec 09, 2021		Soil	W21-De24657	X			X	X	X		X	X	X	
29	CPT17_0.4-0.5	Dec 09, 2021		Soil	W21-De24658		X									
30	CPT17_1.1-	Dec 09, 2021		Soil	W21-De24659		X									

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Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254								X		X			X	X		
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X		X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794																X
Mayfield Laboratory - NATA # 1261 Site # 25079																
Perth Laboratory - NATA # 2377 Site # 2370																
External Laboratory																
30	CPT17_1.1-1.2	Dec 09, 2021		Soil	W21-De24659											
31	CPT15_0.1-0.2	Dec 09, 2021		Soil	W21-De24660						X		X		X	
32	CPT15_0.4-0.5	Dec 09, 2021		Soil	W21-De24661		X									
33	CPT15_1.1-1.2	Dec 09, 2021		Soil	W21-De24662						X		X		X	
34	RB-1	Dec 09, 2021		Water	W21-De24663						X	X			X	
35	DUP2	Dec 09, 2021		Soil	W21-De24664						X		X		X	
Test Counts						3	19	2	2	2	16	5	15	2	16	1

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Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

.

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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
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							
Organochlorine Pesticides							
Chlordanes - Total	mg/L	< 0.002			0.002	Pass	
4.4'-DDD	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDE	mg/L	< 0.0002			0.0002	Pass	
4.4'-DDT	mg/L	< 0.0002			0.0002	Pass	
a-HCH	mg/L	< 0.0002			0.0002	Pass	
Aldrin	mg/L	< 0.0002			0.0002	Pass	
b-HCH	mg/L	< 0.0002			0.0002	Pass	
d-HCH	mg/L	< 0.0002			0.0002	Pass	
Dieldrin	mg/L	< 0.0002			0.0002	Pass	
Endosulfan I	mg/L	< 0.0002			0.0002	Pass	
Endosulfan II	mg/L	< 0.0002			0.0002	Pass	
Endosulfan sulphate	mg/L	< 0.0002			0.0002	Pass	
Endrin	mg/L	< 0.0002			0.0002	Pass	
Endrin aldehyde	mg/L	< 0.0002			0.0002	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/L	< 0.0002			0.0002	Pass	
g-HCH (Lindane)	mg/L	< 0.0002			0.0002	Pass	
Heptachlor	mg/L	< 0.0002			0.0002	Pass	
Heptachlor epoxide	mg/L	< 0.0002			0.0002	Pass	
Hexachlorobenzene	mg/L	< 0.0002			0.0002	Pass	
Methoxychlor	mg/L	< 0.0002			0.0002	Pass	
Toxaphene	mg/L	< 0.005			0.005	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	< 0.02			0.02	Pass	
Chlorpyrifos	mg/L	< 0.002			0.002	Pass	
Chlorpyrifos-methyl	mg/L	< 0.002			0.002	Pass	
Coumaphos	mg/L	< 0.02			0.02	Pass	
Demeton-S	mg/L	< 0.002			0.002	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	< 0.02			0.02	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							
Polychlorinated Biphenyls							
Aroclor-1016	mg/L	< 0.005			0.005	Pass	
Aroclor-1221	mg/L	< 0.005			0.005	Pass	
Aroclor-1232	mg/L	< 0.005			0.005	Pass	
Aroclor-1242	mg/L	< 0.005			0.005	Pass	
Aroclor-1248	mg/L	< 0.005			0.005	Pass	
Aroclor-1254	mg/L	< 0.005			0.005	Pass	
Aroclor-1260	mg/L	< 0.005			0.005	Pass	
Total PCB*	mg/L	< 0.005			0.005	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
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							
Metals M8							
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	%	130			70-130	Pass	
TRH C10-C14	%	73			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	118			70-130	Pass	
Toluene	%	119			70-130	Pass	
Ethylbenzene	%	118			70-130	Pass	
m&p-Xylenes	%	115			70-130	Pass	
o-Xylene	%	119			70-130	Pass	
Xylenes - Total*	%	116			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	119			70-130	Pass	
TRH C6-C10	%	128			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	100			70-130	Pass	
Acenaphthylene	%	101			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	106			70-130	Pass	
Benzo(a)pyrene	%	125			70-130	Pass	
Benzo(b&j)fluoranthene	%	122			70-130	Pass	
Benzo(g.h.i)perylene	%	109			70-130	Pass	
Benzo(k)fluoranthene	%	129			70-130	Pass	
Chrysene	%	105			70-130	Pass	
Dibenz(a.h)anthracene	%	120			70-130	Pass	
Fluoranthene	%	112			70-130	Pass	
Fluorene	%	128			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	124			70-130	Pass	
Naphthalene	%	104			70-130	Pass	
Phenanthrene	%	108			70-130	Pass	
Pyrene	%	113			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	89			70-130	Pass	
4.4'-DDD	%	85			70-130	Pass	
4.4'-DDE	%	99			70-130	Pass	
4.4'-DDT	%	92			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-HCH	%	83			70-130	Pass	
Aldrin	%	93			70-130	Pass	
b-HCH	%	87			70-130	Pass	
d-HCH	%	88			70-130	Pass	
Dieldrin	%	91			70-130	Pass	
Endosulfan I	%	87			70-130	Pass	
Endosulfan II	%	85			70-130	Pass	
Endosulfan sulphate	%	85			70-130	Pass	
Endrin	%	93			70-130	Pass	
Endrin aldehyde	%	85			70-130	Pass	
Endrin ketone	%	88			70-130	Pass	
g-HCH (Lindane)	%	89			70-130	Pass	
Heptachlor	%	92			70-130	Pass	
Heptachlor epoxide	%	88			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	93			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	89			70-130	Pass	
Dimethoate	%	71			70-130	Pass	
Ethion	%	92			70-130	Pass	
Fenitrothion	%	87			70-130	Pass	
Methyl parathion	%	94			70-130	Pass	
Mevinphos	%	85			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	84			70-130	Pass	
Aroclor-1260	%	93			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	72			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	97			80-120	Pass	
Cadmium	%	98			80-120	Pass	
Chromium	%	103			80-120	Pass	
Copper	%	102			80-120	Pass	
Lead	%	98			80-120	Pass	
Mercury	%	102			80-120	Pass	
Nickel	%	100			80-120	Pass	
Zinc	%	105			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S21-De38242	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S21-De38242	NCP	%	113			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S21-De42827	NCP	%	110			75-125	Pass	
Cadmium	S21-De42827	NCP	%	101			75-125	Pass	
Chromium	S21-De42827	NCP	%	95			75-125	Pass	
Copper	S21-De42827	NCP	%	88			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Lead	S21-De42827	NCP	%	88			75-125	Pass	
Mercury	S21-De42827	NCP	%	83			75-125	Pass	
Nickel	S21-De42827	NCP	%	88			75-125	Pass	
Zinc	S21-De42827	NCP	%	106			75-125	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	S21-De27691	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S21-De38242	NCP	mg/L	0.16	< 0.05	200	30%	Fail	Q15
TRH C15-C28	S21-De38242	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	S21-De38242	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De27691	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S21-De27691	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S21-De27691	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S21-De27691	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S21-De27691	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S21-De27691	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-De27691	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S21-De27691	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	S21-De38242	NCP	mg/L	< 0.05	0.06	58	30%	Fail	Q15
TRH >C16-C34	S21-De38242	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	S21-De38242	NCP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S21-De27002	NCP	mg/L	0.007	0.007	6.0	30%	Pass	
Cadmium	S21-De27002	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S21-De27002	NCP	mg/L	0.042	0.041	2.0	30%	Pass	
Copper	S21-De27002	NCP	mg/L	0.026	0.026	2.0	30%	Pass	
Lead	S21-De27002	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	S21-De27002	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S21-De27002	NCP	mg/L	0.005	0.005	1.0	30%	Pass	
Zinc	S21-De27002	NCP	mg/L	0.009	0.010	7.0	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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood				
Report Results to:	Matthew Locke	Mobile:		Email:	matthew.locke@tetratech.com
Invoices to:	general.admin@coffey.com	Phone:		Email:	delfa.sarabia@tetratech.com

Project No:	SYDGE295047	Task No:	
Project Name:	St George	Laboratory:	Eurofins
Sampler's Name:	Cameron Prentice	Project Manager:	Delfa Sarabia
Quote number (if different to current quoted prices):			
Special Instructions:			

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS			NOTES
	BH5_0.1-0.2	13/12/21		Soil	J, A	Standard	✓	✓	✓	✓	✓	✓	✓	✓						Container Types:
	" " _0.4-0.5				J		✓	✓	✓		✓	✓	✓							P= PFAS Jar
	" " _0.9-1.0				J		✓	✓	✓		✓	✓	✓							J= Glass jar
	" " _1.5-1.6				J		✓	✓	✓		✓	✓	✓							A= Asbestos bag
	" " _3.0-3.1				J		✓	✓	✓		✓	✓	✓							ASS= Acid Sulfate bag
	BH5_4.5-4.6				ASS											✓	✓			
	Trip Blank																			
	Trip Spike																			

RELINQUISHED BY			RECEIVED BY		
Name: Cameron Prentice	Date: 13/12/21	→	Name: Hannah M	Date: 13/12/21
Coffey	Time: 16:30		Company: Eurofins	Time: 4:30PM
Name:	Date:	→	Name:	Date:
Company:	Time:		Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No. [ ]

3.1oc

***Container Type & Preservation Codes:** P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 849922

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke — Mobile: — Email: matthew.locke@tetratech.com
Invoices to: general.admin@coffey.com — Phone: — Email: delfa.sarabia@tetratech.com

Project No: SYDGE295047 — Task No:
Project Name: St George — Laboratory: Eurofins
Sampler's Name: Cameron Prentice — Project Manager: Delfa Sarabia
Quote number (if different to current quoted prices):
Special Instructions:

Analysis Request Section: Suite M8 (metals 8) | Suite B4 (TRH/BTEX/PAH) | Suite B15 (OCP/OPP/PCB) | Asbestos (Detect) | CEC | pH | TOC | PFAS | ASS Screening | SPOCAS | Volatile TRH | BTEX

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	BH5 0.1-0.2	13/12/21		Soil	J, A	Standard
	" 0.4-0.5				J	
	" 0.9-1.0				J	
	" 1.5-1.6				J	
	" 3.0-3.1				J	
	BH5 4.5-4.6				ASS	
	Trip Blank					
	Trip Spike					

NOTES
Container Types:
P= PFAS Jar
J= Glass Jar
A= Asbestos bag
ASS= Acid Sulfate bag

RELINQUISHED BY
Name: Cameron Prentice — Date: 13/12/21
Coffey — Time: 16:30
Name: — Date:
Company: — Time:

RECEIVED BY
Name: Hannah M — Date: 13/12/21
Company: Eurofins — Time: 4:30PM
Name: — Date:
Company: — Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 3.1°C

Report: 849922

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

NOTES:
* Please cancel analysis [illegible] BH5 [illegible] + BH5 [illegible]
* Please cancel analy[illegible]
* Please analyse Trip [illegible]
* Please cancel ASS Screening analysis on sample [illegible]

Chain of custody
Issued: 30 July 2020
UNCONTROLLED WHEN PRINTED

Hannah Mawbey

From: Locke, Matthew <Matthew.Locke@coffey.com>
Sent: Tuesday, 14 December 2021 7:45 AM
To: #AU04_EnvirosampleWOLL
Subject: Amended COC - Coffey Project 'St George' (Ref: SYDGE295047)
Attachments: SYDGE295047_COC_131221.pdf

EXTERNAL EMAIL*

Dear Eurofins
Please find enclosed an amended COC that was submitted yesterday by my colleague Cameron Prentice in relation to our St George Project with reference SYDGE295047.
Please commence testing based on the enclosed amended COC.

I apologise for any confusion. Please contact me if you require clarification.

Regards
Matt

Matthew Locke, BEng (Hons) CEnvP-SC | Principal Environmental Engineer | Practice Leader
Direct **+61 2 9406 1193** | Mobile **+61 427 202 493** | matthew.locke@tetratech.com

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eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
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Phone : +61 2 9900 8400
NATA # 1261 Site # 18217

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

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NATA # 2377 Site # 2370

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35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Dec 13, 2021 4:30 PM
Eurofins reference	849922

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

eurofins | Environment Testing

web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 849922
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 4:30 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X				X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X					
Mayfield Laboratory - NATA # 1261 Site # 25079																	
Perth Laboratory - NATA # 2377 Site # 2370																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	BH5_0.1-0.2	Dec 13, 2021		Soil	W21-De32132	X		X	X	X	X		X	X	X		
2	BH5_0.4-0.5	Dec 13, 2021		Soil	W21-De32133		X										
3	BH5_0.9-1.0	Dec 13, 2021		Soil	W21-De32134					X	X		X		X		
4	BH5_1.5-1.6	Dec 13, 2021		Soil	W21-De32135		X										
5	BH5_3.0-3.1	Dec 13, 2021		Soil	W21-De32136					X	X		X		X		
6	BH5_4.5-4.6	Dec 13, 2021		Soil	W21-De32137							X					
7	TRIP BLANK	Dec 13, 2021		Soil	W21-De32138											X	
8	TRIP SPIKE	Dec 13, 2021		Soil	W21-De32139												X
Test Counts						1	2	1	1	3	3	1	3	1	3	1	1

Certificate of Analysis

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

Attention:	Matthew Locke
Report	849922-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Dec 13, 2021
Date Reported	Dec 23, 2021

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Dec 13, 2021
Report 849922-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH5_0.1-0.2	21-De32132	Dec 13, 2021	Approximate Sample 49g Sample consisted of: Brown coarse-grained sandy soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 14, 2021	Indefinite

eurofins | Environment Testing

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 849922
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 13, 2021 4:30 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X				X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X					
Mayfield Laboratory - NATA # 1261 Site # 25079																	
Perth Laboratory - NATA # 2377 Site # 2370																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	BH5_0.1-0.2	Dec 13, 2021		Soil	W21-De32132	X		X	X	X	X		X	X	X		
2	BH5_0.4-0.5	Dec 13, 2021		Soil	W21-De32133		X										
3	BH5_0.9-1.0	Dec 13, 2021		Soil	W21-De32134					X	X		X		X		
4	BH5_1.5-1.6	Dec 13, 2021		Soil	W21-De32135		X										
5	BH5_3.0-3.1	Dec 13, 2021		Soil	W21-De32136					X	X		X		X		
6	BH5_4.5-4.6	Dec 13, 2021		Soil	W21-De32137							X					
7	TRIP BLANK	Dec 13, 2021		Soil	W21-De32138											X	
8	TRIP SPIKE	Dec 13, 2021		Soil	W21-De32139												X
Test Counts						1	2	1	1	3	3	1	3	1	3	1	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

Comments

The sample received was not collected in an approved asbestos bag and was therefore sub-sampled from the 250mL glass jar. Valid sub-sampling procedures were applied so as to ensure that the sub-sample to be analysed accurately represented the sample received.

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **849922-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 13, 2021

Client Sample ID			**BH5_0.1-0.2**	**BH5_0.9-1.0**	**BH5_3.0-3.1**	**BH5_4.5-4.6**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**W21-De32132**	**W21-De32134**	**W21-De32136**	**W21-De32137**
Date Sampled			**Dec 13, 2021**	**Dec 13, 2021**	**Dec 13, 2021**	**Dec 13, 2021**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	-
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	-
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	-
TRH C29-C36	50	mg/kg	55	< 50	< 50	-
TRH C10-C36 (Total)	50	mg/kg	55	< 50	< 50	-
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	51	73	143	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	-
TRH C6-C10	20	mg/kg	34	< 20	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	34	< 20	< 20	-
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-

Client Sample ID			BH5_0.1-0.2	BH5_0.9-1.0	BH5_3.0-3.1	BH5_4.5-4.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De32132	W21-De32134	W21-De32136	W21-De32137
Date Sampled			Dec 13, 2021	Dec 13, 2021	Dec 13, 2021	Dec 13, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	83	72	75	-
p-Terphenyl-d14 (surr.)	1	%	97	91	95	-
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	0.07	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	0.07	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	0.82	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	0.96	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	0.96	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	76	60	63	-
Tetrachloro-m-xylene (surr.)	1	%	78	82	85	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-

Client Sample ID			BH5_0.1-0.2	BH5_0.9-1.0	BH5_3.0-3.1	BH5_4.5-4.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De32132	W21-De32134	W21-De32136	W21-De32137
Date Sampled			Dec 13, 2021	Dec 13, 2021	Dec 13, 2021	Dec 13, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 2	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	91	80	80	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	76	60	63	-
Tetrachloro-m-xylene (surr.)	1	%	78	82	85	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	-
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	-
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	-
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	37	-	-	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	6.1	-	-	-
Total Organic Carbon	0.1	%	2.3	-	-	-
% Moisture	1	%	72	24	25	-
Metals M8						
Arsenic	2	mg/kg	8.8	6.1	10	-
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	-
Chromium	5	mg/kg	27	30	45	-
Copper	5	mg/kg	37	25	30	-
Lead	5	mg/kg	41	15	17	-
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	-

Client Sample ID			BH5_0.1-0.2	BH5_0.9-1.0	BH5_3.0-3.1	BH5_4.5-4.6
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W21-De32132	W21-De32134	W21-De32136	W21-De32137
Date Sampled			Dec 13, 2021	Dec 13, 2021	Dec 13, 2021	Dec 13, 2021
Test/Reference	LOR	Unit				
Metals M8						
Nickel	5	mg/kg	13	10	36	-
Zinc	5	mg/kg	120	32	49	-
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	8.1	-	-	-
Actual Acidity (NLM-3.2)						
pH-KCL (NLM-3.1)	0.1	pH Units	-	-	-	5.5
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	-	-	7.0
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	-	-	0.010
SPOCAS Suite						
pH-OX	0.1	pH Units	-	-	-	6.1
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	-	-	< 2
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	-	-	< 2
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	-	-	< 0.02
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	-	-	< 0.02
Sulfur - KCl Extractable	0.005	% S	-	-	-	< 0.005
Peroxide Extractable Sulfur	0.005	% S	-	-	-	< 0.005
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	-	-	< 0.02
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	-	-	< 10
HCl Extractable Sulfur Correction Factor	1	factor	-	-	-	2.0
HCl Extractable Sulfur	0.005	% S	-	-	-	N/A
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	-	-	N/A
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	-	-	N/A
Calcium - KCl Extractable	0.005	% Ca	-	-	-	0.040
Calcium - Peroxide	0.005	% Ca	-	-	-	0.050
Calcium - Acid Reacted	0.005	% Ca	-	-	-	0.008
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	-	4.2
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	-	-	0.007
Magnesium - KCl Extractable	0.005	% Mg	-	-	-	0.040
Magnesium - Peroxide	0.005	% Mg	-	-	-	0.040
Magnesium - Acid Reacted	0.005	% Mg	-	-	-	< 0.005
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	-	-	< 0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	-	-	< 0.005
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	-	-	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	-	-	n/a
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	-	-	N/A
ANC Fineness Factor		factor	-	-	-	1.5
Net Acidity (Including ANC)						
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	-	-	< 10
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	-	-	< 0.02
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	-	-	< 1
Extraneous Material						
<2mm Fraction	0.005	g	-	-	-	120
>2mm Fraction	0.005	g	-	-	-	< 0.005
Analysed Material	0.1	%	-	-	-	100
Extraneous Material	0.1	%	-	-	-	< 0.1

Client Sample ID			TRIP BLANK	TRIP SPIKE
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De32138	W21-De32139
Date Sampled			Dec 13, 2021	Dec 13, 2021
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	59	-
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH C6-C10	1	%	-	100
Total Recoverable Hydrocarbons				
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
Naphthalene	1	%	-	96
TRH C6-C9	1	%	-	100
BTEX				
Benzene	1	%	-	110
Ethylbenzene	1	%	-	100
m&p-Xylenes	1	%	-	100
o-Xylene	1	%	-	100
Toluene	1	%	-	100
Xylenes - Total	1	%	-	100
4-Bromofluorobenzene (surr.)	1	%	-	112

Sample History

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

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	Dec 17, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B4			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 17, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 17, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Dec 21, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 21, 2021	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Dec 17, 2021	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Dec 23, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
Metals M8	Sydney	Dec 17, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Dec 14, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Dec 16, 2021	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Dec 16, 2021	6 Week
- Method: LTM-GEN-7050/7070			

eurofins | Environment Testing

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Project ID: SYDGE295047

Order No.:
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Received: Dec 13, 2021 4:30 PM
Due: Dec 20, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									X				X	X			
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X		X		X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794												X					
Mayfield Laboratory - NATA # 1261 Site # 25079																	
Perth Laboratory - NATA # 2377 Site # 2370																	
External Laboratory																	
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**												
1	BH5_0.1-0.2	Dec 13, 2021		Soil	W21-De32132	X		X	X	X	X		X	X	X		
2	BH5_0.4-0.5	Dec 13, 2021		Soil	W21-De32133		X										
3	BH5_0.9-1.0	Dec 13, 2021		Soil	W21-De32134					X	X		X		X		
4	BH5_1.5-1.6	Dec 13, 2021		Soil	W21-De32135		X										
5	BH5_3.0-3.1	Dec 13, 2021		Soil	W21-De32136					X	X		X		X		
6	BH5_4.5-4.6	Dec 13, 2021		Soil	W21-De32137							X					
7	TRIP BLANK	Dec 13, 2021		Soil	W21-De32138											X	
8	TRIP SPIKE	Dec 13, 2021		Soil	W21-De32139												X
Test Counts						1	2	1	1	3	3	1	3	1	3	1	1

Date Reported:Dec 23, 2021

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	86			70-130	Pass	
TRH C10-C14	%	126			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	113			70-130	Pass	
Toluene	%	106			70-130	Pass	
Ethylbenzene	%	99			70-130	Pass	
m&p-Xylenes	%	104			70-130	Pass	
o-Xylene	%	106			70-130	Pass	
Xylenes - Total*	%	105			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	129			70-130	Pass	
TRH C6-C10	%	82			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	98			70-130	Pass	
Acenaphthylene	%	107			70-130	Pass	
Anthracene	%	107			70-130	Pass	
Benz(a)anthracene	%	87			70-130	Pass	
Benzo(a)pyrene	%	107			70-130	Pass	
Benzo(b&j)fluoranthene	%	104			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	105			70-130	Pass	
Chrysene	%	90			70-130	Pass	
Dibenz(a.h)anthracene	%	101			70-130	Pass	
Fluoranthene	%	94			70-130	Pass	
Fluorene	%	103			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	105			70-130	Pass	
Naphthalene	%	101			70-130	Pass	
Phenanthrene	%	110			70-130	Pass	
Pyrene	%	93			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Organochlorine Pesticides							
Chlordanes - Total	%	93			70-130	Pass	
4.4'-DDD	%	79			70-130	Pass	
4.4'-DDE	%	96			70-130	Pass	
4.4'-DDT	%	84			70-130	Pass	
a-HCH	%	94			70-130	Pass	
Aldrin	%	90			70-130	Pass	
b-HCH	%	95			70-130	Pass	
d-HCH	%	94			70-130	Pass	
Dieldrin	%	92			70-130	Pass	
Endosulfan I	%	88			70-130	Pass	
Endosulfan II	%	91			70-130	Pass	
Endosulfan sulphate	%	84			70-130	Pass	
Endrin	%	98			70-130	Pass	
Endrin aldehyde	%	80			70-130	Pass	
Endrin ketone	%	79			70-130	Pass	
g-HCH (Lindane)	%	95			70-130	Pass	
Heptachlor	%	97			70-130	Pass	
Heptachlor epoxide	%	79			70-130	Pass	
Hexachlorobenzene	%	102			70-130	Pass	
Methoxychlor	%	116			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	76			70-130	Pass	
Dimethoate	%	111			70-130	Pass	
Ethion	%	83			70-130	Pass	
Fenitrothion	%	94			70-130	Pass	
Methyl parathion	%	89			70-130	Pass	
Mevinphos	%	89			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	90			70-130	Pass	
Aroclor-1260	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	130			70-130	Pass	
LCS - % Recovery							
Total Organic Carbon	%	96			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	99			80-120	Pass	
Cadmium	%	101			80-120	Pass	
Chromium	%	115			80-120	Pass	
Copper	%	95			80-120	Pass	
Lead	%	117			80-120	Pass	
Mercury	%	105			80-120	Pass	
Nickel	%	118			80-120	Pass	
Zinc	%	92			80-120	Pass	
LCS - % Recovery							
Actual Acidity (NLM-3.2)							
pH-KCL (NLM-3.1)	%	100			80-120	Pass	
Titratable Actual Acidity (NLM-3.2)	%	93			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S21-De44672	NCP	%	72			70-130	Pass	
TRH C10-C14	S21-De41001	NCP	%	89			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-De41777	NCP	%	82			70-130	Pass	
Toluene	S21-De41777	NCP	%	78			70-130	Pass	
Ethylbenzene	S21-De41777	NCP	%	79			70-130	Pass	
m&p-Xylenes	S21-De41777	NCP	%	83			70-130	Pass	
o-Xylene	S21-De41777	NCP	%	85			70-130	Pass	
Xylenes - Total*	S21-De41777	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-De41777	NCP	%	91			70-130	Pass	
TRH C6-C10	S21-De45856	NCP	%	79			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De41655	NCP	%	91			70-130	Pass	
Acenaphthylene	S21-De41655	NCP	%	106			70-130	Pass	
Anthracene	S21-De41655	NCP	%	101			70-130	Pass	
Benz(a)anthracene	S21-De41655	NCP	%	80			70-130	Pass	
Benzo(a)pyrene	S21-De41655	NCP	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De41655	NCP	%	87			70-130	Pass	
Benzo(g.h.i)perylene	S21-De41655	NCP	%	100			70-130	Pass	
Benzo(k)fluoranthene	S21-De41655	NCP	%	106			70-130	Pass	
Chrysene	S21-De41655	NCP	%	84			70-130	Pass	
Dibenz(a.h)anthracene	S21-De41655	NCP	%	105			70-130	Pass	
Fluoranthene	S21-De41655	NCP	%	88			70-130	Pass	
Fluorene	S21-De41655	NCP	%	97			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De41655	NCP	%	105			70-130	Pass	
Naphthalene	S21-De41655	NCP	%	98			70-130	Pass	
Phenanthrene	S21-De41655	NCP	%	102			70-130	Pass	
Pyrene	S21-De41655	NCP	%	87			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-De45092	NCP	%	81			70-130	Pass	
4.4'-DDD	S21-De45092	NCP	%	99			70-130	Pass	
4.4'-DDE	S21-De45092	NCP	%	89			70-130	Pass	
a-HCH	S21-De45092	NCP	%	91			70-130	Pass	
Aldrin	S21-De45092	NCP	%	83			70-130	Pass	
b-HCH	S21-De45092	NCP	%	92			70-130	Pass	
d-HCH	S21-De45092	NCP	%	77			70-130	Pass	
Dieldrin	S21-De45092	NCP	%	72			70-130	Pass	
Endosulfan I	S21-De45092	NCP	%	91			70-130	Pass	
Endosulfan II	S21-De45092	NCP	%	90			70-130	Pass	
Endosulfan sulphate	S21-De45092	NCP	%	96			70-130	Pass	
Endrin aldehyde	S21-De45092	NCP	%	83			70-130	Pass	
Endrin ketone	S21-De45092	NCP	%	127			70-130	Pass	
g-HCH (Lindane)	S21-De45092	NCP	%	78			70-130	Pass	
Heptachlor epoxide	S21-De45092	NCP	%	97			70-130	Pass	
Hexachlorobenzene	S21-De45092	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH >C10-C16	S21-De41001	NCP	%	91			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S21-De22252	NCP	%	102			75-125	Pass	
Cadmium	S21-De22252	NCP	%	109			75-125	Pass	
Chromium	S21-De22252	NCP	%	117			75-125	Pass	
Copper	S21-De22252	NCP	%	92			75-125	Pass	
Lead	S21-De22252	NCP	%	123			75-125	Pass	
Mercury	S21-De22252	NCP	%	105			75-125	Pass	
Nickel	S21-De22252	NCP	%	118			75-125	Pass	
Zinc	S21-De22252	NCP	%	97			75-125	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	S21-De41775	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	W21-De32132	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W21-De32132	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	W21-De32132	CP	mg/kg	55	< 50	66	30%	Fail	Q15
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De41775	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-De41775	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-De41775	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-De41775	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-De41775	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-De41775	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S21-De41775	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-De41775	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	W21-De32132	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
a-HCH	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	W21-De32132	CP	mg/kg	0.07	< 0.05	170	30%	Fail	Q15
Endosulfan II	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	W21-De32132	CP	mg/kg	0.07	< 0.05	160	30%	Fail	Q15
Endrin ketone	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	W21-De32132	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	W21-De32132	CP	mg/kg	0.82	0.82	1.0	30%	Pass	
Toxaphene	S21-De45091	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	W21-De32132	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De32132	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De32132	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De32132	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De32132	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W21-De32132	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W21-De32132	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	W21-De32132	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M21-Oc64265	NCP	uS/cm	420	420	1.3	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	W21-De32132	CP	pH Units	6.1	6.2	<1	30%	Pass	
Total Organic Carbon	B21-De34369	NCP	%	0.1	0.1	7.7	30%	Pass	
% Moisture	W21-De31762	NCP	%	37	33	9.0	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S21-De39665	NCP	mg/kg	12	8.5	34	30%	Fail	Q15
Cadmium	S21-De39665	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-De39665	NCP	mg/kg	41	33	23	30%	Pass	
Copper	S21-De39665	NCP	mg/kg	13	37	95	30%	Fail	Q15
Lead	S21-De17510	NCP	mg/kg	61	73	19	30%	Pass	
Mercury	S21-De39665	NCP	mg/kg	0.2	1.4	150	30%	Fail	Q15
Nickel	S21-De39665	NCP	mg/kg	11	7.1	42	30%	Fail	Q15
Zinc	S21-De17510	NCP	mg/kg	45	43	6.0	30%	Pass	
Duplicate									
Cation Exchange Capacity				Result 1	Result 2	RPD			
Cation Exchange Capacity	W21-De32132	CP	meq/100g	8.1	8.0	2.0	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	S21-No64345	NCP	pH Units	9.4	9.4	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S21-No64345	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	S21-No64345	NCP	% pyrite S	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-OX	S21-No64345	NCP	pH Units	7.6	7.6	<1	30%	Pass	
Titratable Peroxide Acidity (a-TPA)	S21-No64345	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Sulfidic Acidity (a-TSA)	S21-No64345	NCP	mol H+/t	< 2	< 2	<1	30%	Pass	
Titratable Peroxide Acidity (s-TPA)	S21-No64345	NCP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Titratable Sulfidic Acidity (s-TSA)	S21-No64345	NCP	% pyrite S	< 0.02	< 0.02	<1	30%	Pass	
Sulfur - KCl Extractable	S21-No64345	NCP	% S	0.030	0.030	3.0	30%	Pass	
Peroxide Extractable Sulfur	S21-No64345	NCP	% S	0.040	0.040	<1	30%	Pass	
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	S21-No64345	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	S21-No64345	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
HCl Extractable Sulfur	S21-No64345	NCP	% S	N/A	N/A	N/A	30%	Pass	
Net Acid soluble sulfur (a-SNAS) NLM-4.1	S21-No64345	NCP	mol H+/t	N/A	N/A	N/A	30%	Pass	

Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
Net Acid soluble sulfur (s-SNAS) NLM-4.1	S21-No64345	NCP	% S	N/A	N/A	N/A	30%	Pass	
Calcium - KCl Extractable	S21-No64345	NCP	% Ca	0.16	0.16	<1	30%	Pass	
Calcium - Peroxide	S21-No64345	NCP	% Ca	0.39	0.40	1.0	30%	Pass	
Calcium - Acid Reacted	S21-No64345	NCP	% Ca	0.23	0.23	1.0	30%	Pass	
Calcium - Acid Reacted (a-aCa)	S21-No64345	NCP	mol H+/t	110	120	1.0	30%	Pass	
Calcium - Acid Reacted (s-aCa)	S21-No64345	NCP	% S	0.18	0.19	1.0	30%	Pass	
Magnesium - KCl Extractable	S21-No64345	NCP	% Mg	0.030	0.030	<1	30%	Pass	
Magnesium - Peroxide	S21-No64345	NCP	% Mg	0.060	0.060	<1	30%	Pass	
Magnesium - Acid Reacted	S21-No64345	NCP	% Mg	0.037	0.037	1.0	30%	Pass	
Magnesium - Acid Reacted (a-aCa)	S21-No64345	NCP	mol H+/t	30	30	1.0	30%	Pass	
Magnesium - Acid Reacted (s-aCa)	S21-No64345	NCP	% S	0.048	0.049	1.0	30%	Pass	
Acid Neutralising Capacity - (ANCE)	S21-No64345	NCP	% CaCO3	0.98	0.97	1.0	30%	Pass	
Acid Neutralising Capacity - (a-ANCE)	S21-No64345	NCP	mol H+/t	200	190	1.0	30%	Pass	
ANC Fineness Factor	S21-No64345	NCP	factor	1.5	1.5	<1	30%	Pass	
Duplicate									
Net Acidity (Including ANC)				Result 1	Result 2	RPD			
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	S21-No64345	NCP	mol H+/t	< 10	< 10	<1	30%	Pass	
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	S21-No64345	NCP	% S	< 0.02	< 0.02	<1	30%	Pass	
SPOCAS - Liming rate - ASSMAC	S21-No64345	NCP	kg CaCO3/t	< 1	< 1	<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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised by:

Emma Beesley	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Myles Clark	Senior Analyst-SPOCAS (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Locke Mobile: Email: matthew.locke@tetratech.com

Invoices to: general.admin@coffey.com Phone: Email: delfa.sarabia@tetratech.com

Project No: SYDGE255047 Task No:

Project Name: St George Laboratory: Eurofins

Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia

Quote number (If different to current quoted prices):

Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS			NOTES
	BH2 - 0.1-0.2	15/12/21		Soil	J, A, P	Hold	✓	✓	✓	✓				✓						Container Types:
	" " - 0.4-0.5				J															P= PFAS Jar
	" " - 0.9-1.0				J		✓	✓												J= Glass jar
	" " - 1.5-1.6				J															A= Asbestos bag
	" " - 3.0-3.1			↓	J															ASS= Acid Sulfate bag
	RB-2																			
	Field blank					↓								✓						

RELINQUISHED BY		RECEIVED BY	
Name: Cameron Prentice	Date: 15/12/21 →	Name: Hannah M	Date: 15/12/21
Company: Coffey	Time: 16:30	Company: Eurofins	Time: 9:17 AM
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐

All Documentation is in Proper Order ☐

Samples Received Properly Chilled ☐ 4.6°c

Lab. Ref/Batch No.

Report: 851250

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www.eurofins.com.au EnviroSales@eurofins.com

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NATA # 1261 Site # 20794

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IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Dec 17, 2021 9:17 AM
Eurofins reference	851250

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 4.6 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851250
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 17, 2021 9:17 AM
Due: Dec 24, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794											X
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH2_0.1-0.2	Dec 15, 2021		Soil	W21-De42603	X		X	X	X	X
2	BH2_0.9-1.0	Dec 15, 2021		Soil	W21-De42604				X	X	
3	FIELD BLANK	Dec 15, 2021		Water	W21-De42605						X
4	BH2_0.4-0.5	Dec 15, 2021		Soil	W21-De42606		X				
5	BH2_1.5-1.6	Dec 15, 2021		Soil	W21-De42607		X				
6	BH2_3.0-3.1	Dec 15, 2021		Soil	W21-De42608		X				
7	RB-2	Dec 15, 2021		Water	W21-De42609		X				
Test Counts						1	4	1	2	2	2

Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Matthew Locke
Report	851250-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Dec 17, 2021
Date Reported	Jan 06, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Dec 15, 2021
Report 851250-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH2_0.1-0.2	21-De42603	Dec 15, 2021	Approximate Sample 34g Sample consisted of: Brown coarse-grained clayey soil	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 17, 2021	Indefinite

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851250
Phone: +61 2 9406 1000
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Received: Dec 17, 2021 9:17 AM
Due: Dec 24, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794											X
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH2_0.1-0.2	Dec 15, 2021		Soil	W21-De42603	X		X	X	X	X
2	BH2_0.9-1.0	Dec 15, 2021		Soil	W21-De42604				X	X	
3	FIELD BLANK	Dec 15, 2021		Water	W21-De42605						X
4	BH2_0.4-0.5	Dec 15, 2021		Soil	W21-De42606		X				
5	BH2_1.5-1.6	Dec 15, 2021		Soil	W21-De42607		X				
6	BH2_3.0-3.1	Dec 15, 2021		Soil	W21-De42608		X				
7	RB-2	Dec 15, 2021		Water	W21-De42609		X				
Test Counts						1	4	1	2	2	2

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **851250-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 17, 2021

Client Sample ID			**BH2_0.1-0.2**	**BH2_0.9-1.0**
Sample Matrix			**Soil**	**Soil**
Eurofins Sample No.			**W21-De42603**	**W21-De42604**
Date Sampled			**Dec 15, 2021**	**Dec 15, 2021**
Test/Reference	LOR	Unit		
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20
TRH C15-C28	50	mg/kg	52	< 50
TRH C29-C36	50	mg/kg	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	52	< 50
BTEX				
Benzene	0.1	mg/kg	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	83	103
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5

Client Sample ID			BH2_0.1-0.2	BH2_0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De42603	W21-De42604
Date Sampled			Dec 15, 2021	Dec 15, 2021
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Naphthalene	0.5	mg/kg	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	93	91
p-Terphenyl-d14 (surr.)	1	%	INT	INT
Organochlorine Pesticides				
Chlordanes - Total	0.1	mg/kg	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	100	-
Tetrachloro-m-xylene (surr.)	1	%	94	-
Organophosphorus Pesticides				
Azinphos-methyl	0.2	mg/kg	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-
Coumaphos	2	mg/kg	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-

Client Sample ID			BH2_0.1-0.2	BH2_0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De42603	W21-De42604
Date Sampled			Dec 15, 2021	Dec 15, 2021
Test/Reference	LOR	Unit		
Organophosphorus Pesticides				
Ethoprop	0.2	mg/kg	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-
Naled	0.2	mg/kg	< 0.2	-
Omethoate	2	mg/kg	< 2	-
Phorate	0.2	mg/kg	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-
Triphenylphosphate (surr.)	1	%	84	-
Polychlorinated Biphenyls				
Aroclor-1016	0.1	mg/kg	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-
Dibutylchlorendate (surr.)	1	%	100	-
Tetrachloro-m-xylene (surr.)	1	%	94	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100
Metals M8				
Arsenic	2	mg/kg	7.5	7.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4
Chromium	5	mg/kg	26	39
Copper	5	mg/kg	31	34
Lead	5	mg/kg	38	16
Mercury	0.1	mg/kg	< 0.1	< 0.1
Nickel	5	mg/kg	28	9.2
Zinc	5	mg/kg	66	29
% Moisture	1	%	34	22

Client Sample ID			BH2_0.1-0.2	BH2_0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De42603	W21-De42604
Date Sampled			Dec 15, 2021	Dec 15, 2021
Test/Reference	LOR	Unit		
Perfluoroalkyl carboxylic acids (PFCAs)				
Perfluorobutanoic acid (PFBA)[N11]	5	ug/kg	< 5	-
Perfluoropentanoic acid (PFPeA)[N11]	5	ug/kg	< 5	-
Perfluorohexanoic acid (PFHxA)[N11]	5	ug/kg	< 5	-
Perfluoroheptanoic acid (PFHpA)[N11]	5	ug/kg	< 5	-
Perfluorooctanoic acid (PFOA)[N11]	5	ug/kg	< 5	-
Perfluorononanoic acid (PFNA)[N11]	5	ug/kg	< 5	-
Perfluorodecanoic acid (PFDA)[N11]	5	ug/kg	< 5	-
Perfluoroundecanoic acid (PFUnDA)[N11]	5	ug/kg	< 5	-
Perfluorododecanoic acid (PFDoDA)[N11]	5	ug/kg	< 5	-
Perfluorotridecanoic acid (PFTrDA)[N15]	5	ug/kg	< 5	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	5	ug/kg	< 5	-
13C4-PFBA (surr.)	1	%	88	-
13C5-PFPeA (surr.)	1	%	99	-
13C5-PFHxA (surr.)	1	%	93	-
13C4-PFHpA (surr.)	1	%	113	-
13C8-PFOA (surr.)	1	%	89	-
13C5-PFNA (surr.)	1	%	100	-
13C6-PFDA (surr.)	1	%	121	-
13C2-PFUnDA (surr.)	1	%	126	-
13C2-PFDoDA (surr.)	1	%	88	-
13C2-PFTeDA (surr.)	1	%	83	-
Perfluoroalkyl sulfonamido substances				
Perfluorooctane sulfonamide (FOSA)[N11]	5	ug/kg	< 5	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	5	ug/kg	< 5	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	5	ug/kg	< 5	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	5	ug/kg	< 5	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	5	ug/kg	< 5	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	10	ug/kg	< 10	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	10	ug/kg	< 10	-
13C8-FOSA (surr.)	1	%	93	-
D3-N-MeFOSA (surr.)	1	%	62	-
D5-N-EtFOSA (surr.)	1	%	88	-
D7-N-MeFOSE (surr.)	1	%	80	-
D9-N-EtFOSE (surr.)	1	%	95	-
D5-N-EtFOSAA (surr.)	1	%	84	-
D3-N-MeFOSAA (surr.)	1	%	150	-
Perfluoroalkyl sulfonic acids (PFSAs)				
Perfluorobutanesulfonic acid (PFBS)[N11]	5	ug/kg	< 5	-
Perfluorononanesulfonic acid (PFNS)[N15]	5	ug/kg	< 5	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	5	ug/kg	< 5	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	5	ug/kg	< 5	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	5	ug/kg	< 5	-
Perfluoroheptanesulfonic acid (PFHpS)[N15]	5	ug/kg	< 5	-
Perfluorooctanesulfonic acid (PFOS)[N11]	5	ug/kg	< 5	-
Perfluorodecanesulfonic acid (PFDS)[N15]	5	ug/kg	< 5	-
13C3-PFBS (surr.)	1	%	103	-

Client Sample ID			BH2_0.1-0.2	BH2_0.9-1.0
Sample Matrix			Soil	Soil
Eurofins Sample No.			W21-De42603	W21-De42604
Date Sampled			Dec 15, 2021	Dec 15, 2021
Test/Reference	LOR	Unit		
Perfluoroalkyl sulfonic acids (PFSAs)				
18O2-PFHxS (surr.)	1	%	123	-
13C8-PFOS (surr.)	1	%	109	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	5	ug/kg	< 5	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	10	ug/kg	< 10	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	5	ug/kg	< 5	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	5	ug/kg	< 5	-
13C2-4:2 FTSA (surr.)	1	%	116	-
13C2-6:2 FTSA (surr.)	1	%	142	-
13C2-8:2 FTSA (surr.)	1	%	121	-
13C2-10:2 FTSA (surr.)	1	%	157	-
PFASs Summations				
Sum (PFHxS + PFOS)*	5	ug/kg	< 5	-
Sum of US EPA PFAS (PFOS + PFOA)*	5	ug/kg	< 5	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	5	ug/kg	< 5	-
Sum of WA DWER PFAS (n=10)*	10	ug/kg	< 10	-
Sum of PFASs (n=30)*	50	ug/kg	< 50	-

Sample History

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

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	Dec 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Dec 21, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 21, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 21, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
% Moisture	Sydney	Dec 17, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Dec 29, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Dec 29, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Dec 29, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Dec 29, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851250
Phone: +61 2 9406 1000
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Received: Dec 17, 2021 9:17 AM
Due: Dec 24, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794											X
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH2_0.1-0.2	Dec 15, 2021		Soil	W21-De42603	X		X	X	X	X
2	BH2_0.9-1.0	Dec 15, 2021		Soil	W21-De42604				X	X	
3	FIELD BLANK	Dec 15, 2021		Water	W21-De42605						X
4	BH2_0.4-0.5	Dec 15, 2021		Soil	W21-De42606		X				
5	BH2_1.5-1.6	Dec 15, 2021		Soil	W21-De42607		X				
6	BH2_3.0-3.1	Dec 15, 2021		Soil	W21-De42608		X				
7	RB-2	Dec 15, 2021		Water	W21-De42609		X				
Test Counts						1	4	1	2	2	2

Date Reported:Jan 06, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/kg	< 5			5	Pass	
Perfluoropentanoic acid (PFPeA)	ug/kg	< 5			5	Pass	
Perfluorohexanoic acid (PFHxA)	ug/kg	< 5			5	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/kg	< 5			5	Pass	
Perfluorooctanoic acid (PFOA)	ug/kg	< 5			5	Pass	
Perfluorononanoic acid (PFNA)	ug/kg	< 5			5	Pass	
Perfluorodecanoic acid (PFDA)	ug/kg	< 5			5	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/kg	< 5			5	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/kg	< 5			5	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/kg	< 5			5	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/kg	< 5			5	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/kg	< 5			5	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/kg	< 5			5	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/kg	< 5			5	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/kg	< 5			5	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/kg	< 5			5	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/kg	< 10			10	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/kg	< 10			10	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/kg	< 5			5	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/kg	< 5			5	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/kg	< 5			5	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/kg	< 5			5	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/kg	< 5			5	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/kg	< 5			5	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/kg	< 5			5	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/kg	< 5			5	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/kg	< 10			10	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/kg	< 5			5	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
TRH C6-C9	%	104			70-130	Pass	
TRH C10-C14	%	113			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	97			70-130	Pass	
Toluene	%	94			70-130	Pass	
Ethylbenzene	%	96			70-130	Pass	
m&p-Xylenes	%	99			70-130	Pass	
o-Xylene	%	99			70-130	Pass	
Xylenes - Total*	%	99			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	117			70-130	Pass	
TRH C6-C10	%	102			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	90			70-130	Pass	
Acenaphthylene	%	89			70-130	Pass	
Anthracene	%	79			70-130	Pass	
Benz(a)anthracene	%	100			70-130	Pass	
Benzo(a)pyrene	%	90			70-130	Pass	
Benzo(b&j)fluoranthene	%	115			70-130	Pass	
Benzo(g.h.i)perylene	%	79			70-130	Pass	
Benzo(k)fluoranthene	%	74			70-130	Pass	
Chrysene	%	72			70-130	Pass	
Dibenz(a.h)anthracene	%	81			70-130	Pass	
Fluoranthene	%	88			70-130	Pass	
Fluorene	%	95			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	82			70-130	Pass	
Naphthalene	%	93			70-130	Pass	
Phenanthrene	%	90			70-130	Pass	
Pyrene	%	88			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	83			70-130	Pass	
4.4'-DDD	%	95			70-130	Pass	
4.4'-DDE	%	93			70-130	Pass	
4.4'-DDT	%	87			70-130	Pass	
a-HCH	%	79			70-130	Pass	
Aldrin	%	93			70-130	Pass	
b-HCH	%	91			70-130	Pass	
d-HCH	%	72			70-130	Pass	
Dieldrin	%	84			70-130	Pass	
Endosulfan I	%	81			70-130	Pass	
Endosulfan II	%	82			70-130	Pass	
Endosulfan sulphate	%	78			70-130	Pass	
Endrin	%	104			70-130	Pass	
Endrin aldehyde	%	82			70-130	Pass	
Endrin ketone	%	73			70-130	Pass	
g-HCH (Lindane)	%	80			70-130	Pass	
Heptachlor	%	92			70-130	Pass	
Heptachlor epoxide	%	85			70-130	Pass	
Hexachlorobenzene	%	83			70-130	Pass	
Methoxychlor	%	96			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	101			70-130	Pass	
Dimethoate	%	86			70-130	Pass	
Ethion	%	115			70-130	Pass	
Fenitrothion	%	87			70-130	Pass	
Methyl parathion	%	103			70-130	Pass	
Mevinphos	%	116			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	90			70-130	Pass	
Aroclor-1260	%	75			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	114			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	106			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	109			80-120	Pass	
Copper	%	108			80-120	Pass	
Lead	%	105			80-120	Pass	
Mercury	%	107			80-120	Pass	
Nickel	%	109			80-120	Pass	
Zinc	%	104			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	112			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	88			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	101			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	98			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	111			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	147			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	139			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	119			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	144			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	82			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	121			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	115			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	90			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	115			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	85			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	108			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	100			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	89			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	107			50-150	Pass	

Test			Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroheptanesulfonic acid (PFHpS)			%	148			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)			%	112			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)			%	123			50-150	Pass	
LCS - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)									
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)			%	92			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)			%	135			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)			%	125			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)			%	113			50-150	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	S21-De41001	NCP	%	107			70-130	Pass	
TRH C10-C14	S21-De45830	NCP	%	96			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-De41001	NCP	%	92			70-130	Pass	
Toluene	S21-De41001	NCP	%	81			70-130	Pass	
Ethylbenzene	S21-De41001	NCP	%	72			70-130	Pass	
m&p-Xylenes	S21-De41001	NCP	%	77			70-130	Pass	
o-Xylene	S21-De41001	NCP	%	73			70-130	Pass	
Xylenes - Total*	S21-De41001	NCP	%	76			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	S21-De41001	NCP	%	96			70-130	Pass	
TRH C6-C10	S21-De41001	NCP	%	111			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De47698	NCP	%	95			70-130	Pass	
Acenaphthylene	S21-De47698	NCP	%	91			70-130	Pass	
Anthracene	S21-De47698	NCP	%	94			70-130	Pass	
Benz(a)anthracene	S21-De47698	NCP	%	85			70-130	Pass	
Benzo(a)pyrene	S21-De47698	NCP	%	99			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De47698	NCP	%	98			70-130	Pass	
Benzo(g.h.i)perylene	S21-De47698	NCP	%	94			70-130	Pass	
Benzo(k)fluoranthene	S21-De47698	NCP	%	100			70-130	Pass	
Chrysene	S21-De47698	NCP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	S21-De47698	NCP	%	99			70-130	Pass	
Fluoranthene	S21-De47698	NCP	%	92			70-130	Pass	
Fluorene	S21-De47698	NCP	%	98			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De47698	NCP	%	96			70-130	Pass	
Naphthalene	S21-De47698	NCP	%	97			70-130	Pass	
Phenanthrene	S21-De47698	NCP	%	89			70-130	Pass	
Pyrene	S21-De47698	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-De47698	NCP	%	90			70-130	Pass	
4.4'-DDD	S21-De47698	NCP	%	84			70-130	Pass	
4.4'-DDE	S21-De47698	NCP	%	100			70-130	Pass	
4.4'-DDT	S21-De47698	NCP	%	80			70-130	Pass	
a-HCH	S21-De47698	NCP	%	86			70-130	Pass	
Aldrin	S21-De47698	NCP	%	97			70-130	Pass	
b-HCH	S21-De47698	NCP	%	88			70-130	Pass	
d-HCH	S21-De47698	NCP	%	84			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Dieldrin	S21-De47698	NCP	%	87			70-130	Pass	
Endosulfan I	S21-De47698	NCP	%	94			70-130	Pass	
Endosulfan II	S21-De47698	NCP	%	78			70-130	Pass	
Endosulfan sulphate	S21-De47698	NCP	%	80			70-130	Pass	
Endrin	S21-De47698	NCP	%	99			70-130	Pass	
Endrin aldehyde	S21-De50200	NCP	%	70			70-130	Pass	
Endrin ketone	S21-De47698	NCP	%	76			70-130	Pass	
g-HCH (Lindane)	S21-De47698	NCP	%	95			70-130	Pass	
Heptachlor	S21-De47698	NCP	%	100			70-130	Pass	
Heptachlor epoxide	S21-De47698	NCP	%	93			70-130	Pass	
Hexachlorobenzene	S21-De47698	NCP	%	91			70-130	Pass	
Methoxychlor	S21-De47698	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S21-De47698	NCP	%	106			70-130	Pass	
Dimethoate	S21-De47698	NCP	%	39			70-130	Fail	Q08
Ethion	S21-De47698	NCP	%	115			70-130	Pass	
Fenitrothion	S21-De47698	NCP	%	95			70-130	Pass	
Methyl parathion	S21-De47698	NCP	%	115			70-130	Pass	
Mevinphos	S21-De47698	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-De47698	NCP	%	97			70-130	Pass	
Aroclor-1260	S21-De47698	NCP	%	82			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S21-De45830	NCP	%	101			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S21-De47697	NCP	%	112			75-125	Pass	
Cadmium	S21-De47697	NCP	%	107			75-125	Pass	
Chromium	S21-De47697	NCP	%	109			75-125	Pass	
Copper	S21-De47697	NCP	%	104			75-125	Pass	
Lead	S21-De47697	NCP	%	101			75-125	Pass	
Mercury	S21-De47697	NCP	%	88			75-125	Pass	
Nickel	S21-De47697	NCP	%	109			75-125	Pass	
Zinc	S21-De47697	NCP	%	114			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	B21-De36349	NCP	%	110			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	B21-De36349	NCP	%	107			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	B21-De36349	NCP	%	78			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-De36349	NCP	%	99			50-150	Pass	
Perfluorooctanoic acid (PFOA)	B21-De36349	NCP	%	94			50-150	Pass	
Perfluorononanoic acid (PFNA)	B21-De36349	NCP	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	B21-De36349	NCP	%	98			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-De36349	NCP	%	142			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-De36349	NCP	%	112			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-De36349	NCP	%	138			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-De36349	NCP	%	130			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorooctane sulfonamide (FOSA)	B21-De36349	NCP	%	148			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-De36349	NCP	%	80			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-De36349	NCP	%	113			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-De36349	NCP	%	114			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-De36349	NCP	%	131			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-De36349	NCP	%	89			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-De36349	NCP	%	110			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	B21-De36349	NCP	%	91			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-De36349	NCP	%	116			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-De36349	NCP	%	135			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-De36349	NCP	%	93			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-De36349	NCP	%	91			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-De36349	NCP	%	145			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-De36349	NCP	%	107			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-De36349	NCP	%	115			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-De36349	NCP	%	110			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-De36349	NCP	%	131			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-De36349	NCP	%	106			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-De36349	NCP	%	140			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S21-De46982	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	W21-De42603	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	W21-De42603	CP	mg/kg	52	< 50	32	30%	Fail	Q15
TRH C29-C36	W21-De42603	CP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De46982	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-De46982	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-De46982	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-De46982	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-De46982	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-De46982	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	

Duplicate								
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD		
Naphthalene	S21-De46982	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
TRH C6-C10	S21-De46982	NCP	mg/kg	< 20	< 20	<1	30%	Pass
Duplicate								
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD		
Acenaphthene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Acenaphthylene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Anthracene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benz(a)anthracene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(a)pyrene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(b&j)fluoranthene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(g.h.i)perylene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Benzo(k)fluoranthene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Chrysene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Dibenz(a.h)anthracene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluoranthene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Fluorene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Indeno(1.2.3-cd)pyrene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Naphthalene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Phenanthrene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Pyrene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organochlorine Pesticides				Result 1	Result 2	RPD		
Chlordanes - Total	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass
4.4'-DDD	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDE	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
4.4'-DDT	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
a-HCH	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Aldrin	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
b-HCH	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
d-HCH	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Dieldrin	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan I	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan II	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endosulfan sulphate	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin aldehyde	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Endrin ketone	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
g-HCH (Lindane)	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Heptachlor epoxide	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Hexachlorobenzene	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Methoxychlor	W21-De42603	CP	mg/kg	< 0.05	< 0.05	<1	30%	Pass
Toxaphene	W21-De42603	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass
Duplicate								
Organophosphorus Pesticides				Result 1	Result 2	RPD		
Azinphos-methyl	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Bolstar	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorfenvinphos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Chlorpyrifos-methyl	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Coumaphos	W21-De42603	CP	mg/kg	< 2	< 2	<1	30%	Pass
Demeton-S	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Demeton-O	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass
Diazinon	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Dichlorvos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	W21-De42603	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	W21-De42603	CP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	W21-De42603	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	W21-De42603	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W21-De42603	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	W21-De42603	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	W21-De42603	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	B21-De36350	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	B21-De36350	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	B21-De36350	NCP	ug/kg	8.7	7.4	16	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	B21-De36350	NCP	ug/kg	< 10	< 10	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	B21-De36350	NCP	ug/kg	< 5	< 5	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	W21-De42604	CP	mg/kg	7.1	4.8	37	30%	Fail	Q15
Cadmium	W21-De42604	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	W21-De42604	CP	mg/kg	39	36	7.0	30%	Pass	
Copper	W21-De42604	CP	mg/kg	34	32	6.0	30%	Pass	
Lead	W21-De42604	CP	mg/kg	16	14	8.0	30%	Pass	
Mercury	W21-De42604	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	W21-De42604	CP	mg/kg	9.2	8.1	13	30%	Pass	
Zinc	W21-De42604	CP	mg/kg	29	25	13	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	W21-De42604	CP	%	22	22	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Sarah McCallion	Senior Analyst-PFAS (QLD)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **851250-W**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 17, 2021

Client Sample ID			**FIELD BLANK**
Sample Matrix			**Water**
Eurofins Sample No.			**W21-De42605**
Date Sampled			**Dec 15, 2021**
Test/Reference	LOR	Unit	
Perfluoroalkyl carboxylic acids (PFCAs)			
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01
13C4-PFBA (surr.)	1	%	81
13C5-PFPeA (surr.)	1	%	83
13C5-PFHxA (surr.)	1	%	109
13C4-PFHpA (surr.)	1	%	82
13C8-PFOA (surr.)	1	%	83
13C5-PFNA (surr.)	1	%	86
13C6-PFDA (surr.)	1	%	109
13C2-PFUnDA (surr.)	1	%	75
13C2-PFDoDA (surr.)	1	%	67
13C2-PFTeDA (surr.)	1	%	72
Perfluoroalkyl sulfonamido substances			
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05
13C8-FOSA (surr.)	1	%	72
D3-N-MeFOSA (surr.)	1	%	59
D5-N-EtFOSA (surr.)	1	%	57

Client Sample ID			FIELD BLANK
Sample Matrix			Water
Eurofins Sample No.			W21-De42605
Date Sampled			Dec 15, 2021
Test/Reference	LOR	Unit	
Perfluoroalkyl sulfonamido substances			
D7-N-MeFOSE (surr.)	1	%	61
D9-N-EtFOSE (surr.)	1	%	67
D5-N-EtFOSAA (surr.)	1	%	42
D3-N-MeFOSAA (surr.)	1	%	43
Perfluoroalkyl sulfonic acids (PFSAs)			
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01
13C3-PFBS (surr.)	1	%	92
18O2-PFHxS (surr.)	1	%	90
13C8-PFOS (surr.)	1	%	118
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01
13C2-4:2 FTSA (surr.)	1	%	59
13C2-6:2 FTSA (surr.)	1	%	22
13C2-8:2 FTSA (surr.)	1	%	31
13C2-10:2 FTSA (surr.)	1	%	85
PFASs Summations			
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1

Sample History

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

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
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Dec 21, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Dec 21, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Dec 21, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Dec 21, 2021	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

eurofins | Environment Testing

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851250
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 17, 2021 9:17 AM
Due: Dec 24, 2021
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	Moisture Set	Eurofins Suite B7	Per- and Polyfluoroalkyl Substances (PFASs)
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	
Brisbane Laboratory - NATA # 1261 Site # 20794											X
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH2_0.1-0.2	Dec 15, 2021		Soil	W21-De42603	X		X	X	X	X
2	BH2_0.9-1.0	Dec 15, 2021		Soil	W21-De42604				X	X	
3	FIELD BLANK	Dec 15, 2021		Water	W21-De42605						X
4	BH2_0.4-0.5	Dec 15, 2021		Soil	W21-De42606		X				
5	BH2_1.5-1.6	Dec 15, 2021		Soil	W21-De42607		X				
6	BH2_3.0-3.1	Dec 15, 2021		Soil	W21-De42608		X				
7	RB-2	Dec 15, 2021		Water	W21-De42609		X				
Test Counts						1	4	1	2	2	2

Date Reported:Jan 06, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	124			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	131			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	116			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	124			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	120			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	121			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	103			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	113			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	140			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	77			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	106			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	104			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	94			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	95			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	113			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	98			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	125			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	134			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	104			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	%	105			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	143			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	118			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	121			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	136			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	114			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	108			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	136			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	136			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	122			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	130			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	S21-De48651	NCP	%	118			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	S21-De43783	NCP	%	126			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	S21-De48651	NCP	%	73			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	S21-De48651	NCP	%	113			50-150	Pass	
Perfluorooctanoic acid (PFOA)	S21-De48651	NCP	%	87			50-150	Pass	
Perfluorononanoic acid (PFNA)	S21-De48651	NCP	%	111			50-150	Pass	
Perfluorodecanoic acid (PFDA)	S21-De48651	NCP	%	89			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	S21-De48651	NCP	%	87			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	S21-De48651	NCP	%	108			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	S21-De48651	NCP	%	100			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S21-De48651	NCP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	S21-De48651	NCP	%	94			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S21-De48651	NCP	%	109			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S21-De48651	NCP	%	88			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S21-De48651	NCP	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S21-De48651	NCP	%	78			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S21-De48651	NCP	%	101			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S21-De48651	NCP	%	113			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	S21-De48651	NCP	%	105			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	S21-De43783	NCP	%	102			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S21-De48651	NCP	%	124			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S21-De48651	NCP	%	101			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S21-De43783	NCP	%	111			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S21-De48651	NCP	%	98			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	S21-De43783	NCP	%	100			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	S21-De43783	NCP	%	95			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S21-De48651	NCP	%	129			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S21-De48651	NCP	%	78			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S21-De48651	NCP	%	116			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S21-De48651	NCP	%	112			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	S21-De43780	NCP	ug/L	0.04	0.04	1.0	30%	Pass	
Perfluorohexanoic acid (PFHxA)	S21-De43780	NCP	ug/L	0.12	0.12	3.0	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	S21-De43780	NCP	ug/L	0.03	0.03	6.0	30%	Pass	
Perfluorooctanoic acid (PFOA)	S21-De43780	NCP	ug/L	0.06	0.05	3.0	30%	Pass	
Perfluorononanoic acid (PFNA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	S21-De43776	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	S21-De43776	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	S21-De43780	NCP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	S21-De43780	NCP	ug/L	0.09	0.08	4.0	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	S21-De43780	NCP	ug/L	0.05	0.05	7.0	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	S21-De43780	NCP	ug/L	0.13	0.12	6.0	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	S21-De43776	NCP	ug/L	0.24	0.23	4.0	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	S21-De43780	NCP	ug/L	0.06	0.07	10	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	S21-De43776	NCP	ug/L	0.03	0.03	1.0	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	S21-De43780	NCP	ug/L	0.09	0.07	18	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	S21-De43780	NCP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).

Authorised by:

Ursula Long	Analytical Services Manager
Sarah McCallion	Senior Analyst-PFAS (QLD)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke
Invoice to: general.admin@coffey.com
Mobile:
Phone:
Email: matthew.locke@tetratech.com
Email: della.sacibia@tetratech.com

Project No: SYDGE[illegible]
Project Name: St George
Sampler's Name: Cameron Prentice
Quote number (if different to current quoted prices):
Special Instructions:
Task No:
Laboratory:
Project Manager: Della Sacibia
Lab No:

Receiving Lab (Batch Ref)	Sample ID	Sample Date	Time	Matrix (Soil, etc)	Container Type & Preservation*	T-A-T (specify)	Suite M8 (metals 8)	Suite 04 (TRH/BTEX/PAH)	Suite 815 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS	ASS Screening	SPOCAS	NOTES
	BH8_0.1-0.2	16/12/21		Soil	J,A	[illegible]											
	" _0.4-0.5	↓		↓	J	STANDARD TAT											
	" _0.4-1.0				J												
	" _1.9-2.0				J												
	" _2.9-3.0				J												
	" _3.9-4.0				J												
	" _4.9-5.0				J												
	BH6_0.1-0.2				J,A												
	" _0.4-0.5				J,A												
	" _0.9-1.0				J												
	" _1.9-2.0				J												
	" _2.9-3.0				J												
	" _3.9-4.0				J												
	" _4.9-5.0				J												
	Dup3				J												SEND TO ALS
	Trip3				J	↓											

NOTES
Container Types:
P= PFAS Jar
J= Glass Jar
A= Asbestos Bag
ASS= Acid Sulfate Bag

RELINQUISHED BY
Name: Cameron Prentice Date: 16/12/21
Coffey Time: 16:30
Name: Date:
Company: Time:

RECEIVED BY
Name: [illegible] Date: 17/12
Company: Eurofins Time: 9:32am
Name: Date:
Company: Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Received in Good Condition ☑
All Documentation is in Proper Order ☑
Samples Received Properly Chilled ☑
Lab Ref/Batch No: #851989

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservation

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Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	10 Day
Date/Time received	Dec 17, 2021 9:32 AM
Eurofins reference	851989

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 4.5 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.
✓	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

TRIP3 has been forwarded to ALS per request. Water has seeped into the asbestos bags, analysis will continue as normal, please confirm this is acceptable. Soil trip spike and blank set is present but not on COC, sample has been put on hold, please advise if analysis should be scheduled.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851989
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 17, 2021 9:32 AM
Due: Jan 4, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	BH8_0.1-0.2	Dec 16, 2021		Soil	S21-De49273	X				X	X	X		X
2	BH8_0.4-0.5	Dec 16, 2021		Soil	S21-De49274		X							
3	BH8_0.9-1.0	Dec 16, 2021		Soil	S21-De49275					X		X		X
4	BH8_1.9-2.0	Dec 16, 2021		Soil	S21-De49276		X							
5	BH8_2.9-3.0	Dec 16, 2021		Soil	S21-De49277		X							
6	BH8_3.9-4.0	Dec 16, 2021		Soil	S21-De49278		X							
7	BH8_4.9-5.0	Dec 16, 2021		Soil	S21-De49279		X							
8	BH6_0.1-0.2	Dec 16, 2021		Soil	S21-De49280		X							
9	BH6_0.4-0.5	Dec 16, 2021		Soil	S21-De49281			X	X	X	X	X	X	X

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Received: Dec 17, 2021 9:32 AM
Due: Jan 4, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	BH6_0.9-1.0	Dec 16, 2021		Soil	S21-De49282		X							
11	BH6_1.9-2.0	Dec 16, 2021		Soil	S21-De49283					X		X		X
12	BH6_2.9-3.0	Dec 16, 2021		Soil	S21-De49284		X							
13	BH6_3.9-4.0	Dec 16, 2021		Soil	S21-De49285		X							
14	BH6_4.9-5.0	Dec 16, 2021		Soil	S21-De49286		X							
15	DUP3	Dec 16, 2021		Soil	S21-De49287					X		X		X
16	TS	Dec 16, 2021		Soil	S21-De49288		X							
17	TB	Dec 16, 2021		Soil	S21-De49289		X							
18	TS LAB	Dec 16, 2021		Soil	S21-De49290		X							
Test Counts						1	13	1	1	5	2	5	1	5

Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Matthew Locke
Report	851989-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Dec 17, 2021
Date Reported	Jan 12, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Dec 16, 2021
Report 851989-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH8_0.1-0.2	21-De49273	Dec 16, 2021	Approximate Sample 84g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Dec 21, 2021	Indefinite

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Received: Dec 17, 2021 9:32 AM
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Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	BH8_0.1-0.2	Dec 16, 2021		Soil	S21-De49273	X				X	X	X		X
2	BH8_0.4-0.5	Dec 16, 2021		Soil	S21-De49274		X							
3	BH8_0.9-1.0	Dec 16, 2021		Soil	S21-De49275					X		X		X
4	BH8_1.9-2.0	Dec 16, 2021		Soil	S21-De49276		X							
5	BH8_2.9-3.0	Dec 16, 2021		Soil	S21-De49277		X							
6	BH8_3.9-4.0	Dec 16, 2021		Soil	S21-De49278		X							
7	BH8_4.9-5.0	Dec 16, 2021		Soil	S21-De49279		X							
8	BH6_0.1-0.2	Dec 16, 2021		Soil	S21-De49280		X							
9	BH6_0.4-0.5	Dec 16, 2021		Soil	S21-De49281			X	X	X	X	X	X	X

eurofins | Environment Testing

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851989
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 17, 2021 9:32 AM
Due: Jan 4, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	BH6_0.9-1.0	Dec 16, 2021		Soil	S21-De49282		X							
11	BH6_1.9-2.0	Dec 16, 2021		Soil	S21-De49283					X		X		X
12	BH6_2.9-3.0	Dec 16, 2021		Soil	S21-De49284		X							
13	BH6_3.9-4.0	Dec 16, 2021		Soil	S21-De49285		X							
14	BH6_4.9-5.0	Dec 16, 2021		Soil	S21-De49286		X							
15	DUP3	Dec 16, 2021		Soil	S21-De49287					X		X		X
16	TS	Dec 16, 2021		Soil	S21-De49288		X							
17	TB	Dec 16, 2021		Soil	S21-De49289		X							
18	TS LAB	Dec 16, 2021		Soil	S21-De49290		X							
Test Counts						1	13	1	1	5	2	5	1	5

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Laxman Dias	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Matthew Locke**

Report **851989-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Dec 17, 2021

Client Sample ID			**BH8_0.1-0.2**	**BH8_0.9-1.0**	**BH6_0.4-0.5**	**BH6_1.9-2.0**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**S21-De49273**	**S21-De49275**	**S21-De49281**	**S21-De49283**
Date Sampled			**Dec 16, 2021**	**Dec 16, 2021**	**Dec 16, 2021**	**Dec 16, 2021**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons						
TRH C6-C9	20	mg/kg	< 20	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
TRH C6-C10	20	mg/kg	< 20	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20	< 20
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100	< 100
BTEX						
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	98	109	96	112
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5

Client Sample ID			BH8_0.1-0.2	BH8_0.9-1.0	BH6_0.4-0.5	BH6_1.9-2.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-De49273	S21-De49275	S21-De49281	S21-De49283
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	102	85	54	106
p-Terphenyl-d14 (surr.)	1	%	125	115	130	127
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	< 0.1	-	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	-	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	-	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	-	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	-	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	-	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	-	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	-	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	-	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	-	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	-	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	-	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	128	-	114	-
Tetrachloro-m-xylene (surr.)	1	%	109	-	114	-
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	-	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Coumaphos	2	mg/kg	< 2	-	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	-	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	-	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	-	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	-	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	-	< 0.2	-

Client Sample ID			BH8_0.1-0.2	BH8_0.9-1.0	BH6_0.4-0.5	BH6_1.9-2.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-De49273	S21-De49275	S21-De49281	S21-De49283
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Disulfoton	0.2	mg/kg	< 0.2	-	< 0.2	-
EPN	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethoprop	0.2	mg/kg	< 0.2	-	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	-	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	-	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Monocrotophos	2	mg/kg	< 2	-	< 2	-
Naled	0.2	mg/kg	< 0.2	-	< 0.2	-
Omethoate	2	mg/kg	< 2	-	< 2	-
Phorate	0.2	mg/kg	< 0.2	-	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	-	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	-	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	-	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	-	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	-	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	-	< 0.2	-
Triphenylphosphate (surr.)	1	%	132	-	123	-
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	-	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	-	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	-	< 0.1	-
Dibutylchlorendate (surr.)	1	%	128	-	114	-
Tetrachloro-m-xylene (surr.)	1	%	109	-	114	-
Heavy Metals						
Arsenic	2	mg/kg	7.7	7.9	5.0	5.1
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	21	37	25	34
Copper	5	mg/kg	14	32	50	19
Lead	5	mg/kg	16	13	24	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	5.3	15	28	10
Zinc	5	mg/kg	35	37	48	19
% Moisture	1	%	25	28	29	22
Conductivity (1:5 aqueous extract at 25°C as rec.)	10	uS/cm	-	-	430	-
pH (1:5 Aqueous extract at 25°C as rec.)	0.1	pH Units	-	-	5.8	-
Total Organic Carbon	0.1	%	-	-	4.8	-

Client Sample ID			BH8_0.1-0.2	BH8_0.9-1.0	BH6_0.4-0.5	BH6_1.9-2.0
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			S21-De49273	S21-De49275	S21-De49281	S21-De49283
Date Sampled			Dec 16, 2021	Dec 16, 2021	Dec 16, 2021	Dec 16, 2021
Test/Reference	LOR	Unit				
Cation Exchange Capacity						
Cation Exchange Capacity	0.05	meq/100g	-	-	20	-

Client Sample ID			DUP3
Sample Matrix			Soil
Eurofins Sample No.			S21-De49287
Date Sampled			Dec 16, 2021
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons			
TRH C6-C9	20	mg/kg	< 20
TRH C10-C14	20	mg/kg	< 20
TRH C15-C28	50	mg/kg	< 50
TRH C29-C36	50	mg/kg	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50
Naphthalene[N02]	0.5	mg/kg	< 0.5
TRH C6-C10	20	mg/kg	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20
TRH >C10-C16	50	mg/kg	< 50
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50
TRH >C16-C34	100	mg/kg	< 100
TRH >C34-C40	100	mg/kg	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100
BTEX			
Benzene	0.1	mg/kg	< 0.1
Toluene	0.1	mg/kg	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2
o-Xylene	0.1	mg/kg	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3
4-Bromofluorobenzene (surr.)	1	%	89
Polycyclic Aromatic Hydrocarbons			
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2
Acenaphthene	0.5	mg/kg	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5
Anthracene	0.5	mg/kg	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5
Chrysene	0.5	mg/kg	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5
Fluorene	0.5	mg/kg	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5
Naphthalene	0.5	mg/kg	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5

Client Sample ID			DUP3
Sample Matrix			**Soil**
Eurofins Sample No.			**S21-De49287**
Date Sampled			**Dec 16, 2021**
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Pyrene	0.5	mg/kg	< 0.5
Total PAH*	0.5	mg/kg	< 0.5
2-Fluorobiphenyl (surr.)	1	%	102
p-Terphenyl-d14 (surr.)	1	%	124
Heavy Metals			
Arsenic	2	mg/kg	4.1
Cadmium	0.4	mg/kg	< 0.4
Chromium	5	mg/kg	31
Copper	5	mg/kg	22
Lead	5	mg/kg	12
Mercury	0.1	mg/kg	< 0.1
Nickel	5	mg/kg	9.3
Zinc	5	mg/kg	21
% Moisture	1	%	27

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Dec 23, 2021	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Dec 23, 2021	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Dec 23, 2021	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
pH (1:5 Aqueous extract at 25°C as rec.)	Sydney	Dec 23, 2021	7 Days
- Method: LTM-GEN-7090 pH by ISE			
Total Organic Carbon	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-INO-4060 Total Organic Carbon in water and soil			
% Moisture	Sydney	Dec 21, 2021	14 Days
- Method: LTM-GEN-7080 Moisture			
Conductivity (1:5 aqueous extract at 25°C as rec.)	Melbourne	Dec 31, 2021	7 Days
- Method: LTM-INO-4030 Conductivity			
Cation Exchange Capacity	Melbourne	Dec 31, 2021	28 Days
- Method: LTM-MET-3060 Cation Exchange Capacity by bases & Exchangeable Sodium Percentage			

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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 851989
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Dec 17, 2021 9:32 AM
Due: Jan 4, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**									
1	BH8_0.1-0.2	Dec 16, 2021		Soil	S21-De49273	X				X	X	X		X
2	BH8_0.4-0.5	Dec 16, 2021		Soil	S21-De49274		X							
3	BH8_0.9-1.0	Dec 16, 2021		Soil	S21-De49275					X		X		X
4	BH8_1.9-2.0	Dec 16, 2021		Soil	S21-De49276		X							
5	BH8_2.9-3.0	Dec 16, 2021		Soil	S21-De49277		X							
6	BH8_3.9-4.0	Dec 16, 2021		Soil	S21-De49278		X							
7	BH8_4.9-5.0	Dec 16, 2021		Soil	S21-De49279		X							
8	BH6_0.1-0.2	Dec 16, 2021		Soil	S21-De49280		X							
9	BH6_0.4-0.5	Dec 16, 2021		Soil	S21-De49281			X	X	X	X	X	X	X

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Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	pH (1:5 Aqueous extract at 25°C as rec.)	Total Organic Carbon	Metals M8	Eurofins Suite B15	Moisture Set	Cation Exchange Capacity	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254									X			X	X	
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794														
Mayfield Laboratory - NATA # 1261 Site # 25079														
Perth Laboratory - NATA # 2377 Site # 2370														
External Laboratory														
10	BH6_0.9-1.0	Dec 16, 2021		Soil	S21-De49282		X							
11	BH6_1.9-2.0	Dec 16, 2021		Soil	S21-De49283					X		X		X
12	BH6_2.9-3.0	Dec 16, 2021		Soil	S21-De49284		X							
13	BH6_3.9-4.0	Dec 16, 2021		Soil	S21-De49285		X							
14	BH6_4.9-5.0	Dec 16, 2021		Soil	S21-De49286		X							
15	DUP3	Dec 16, 2021		Soil	S21-De49287					X		X		X
16	TS	Dec 16, 2021		Soil	S21-De49288		X							
17	TB	Dec 16, 2021		Soil	S21-De49289		X							
18	TS LAB	Dec 16, 2021		Soil	S21-De49290		X							
Test Counts						1	13	1	1	5	2	5	1	5

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
LOR	Limit of Reporting.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
LCS	Laboratory Control Sample - reported as percent recovery.
CRM	Certified Reference Material - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
USEPA	United States Environmental Protection Agency
APHA	American Public Health Association
TCLP	Toxicity Characteristic Leaching Procedure
COC	Chain of Custody
SRA	Sample Receipt Advice
QSM	US Department of Defense Quality Systems Manual Version 5.4
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
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Heavy Metals							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
Method Blank							
Conductivity (1:5 aqueous extract at 25°C as rec.)	uS/cm	< 10			10	Pass	
Total Organic Carbon	%	< 0.1			0.1	Pass	
Method Blank							
Cation Exchange Capacity							
Cation Exchange Capacity	meq/100g	< 0.05			0.05	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C9	%	111			70-130	Pass	
TRH C10-C14	%	81			70-130	Pass	
Naphthalene	%	116			70-130	Pass	
TRH C6-C10	%	114			70-130	Pass	
TRH >C10-C16	%	81			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	113			70-130	Pass	
Toluene	%	103			70-130	Pass	
Ethylbenzene	%	107			70-130	Pass	
m&p-Xylenes	%	110			70-130	Pass	
o-Xylene	%	112			70-130	Pass	
Xylenes - Total*	%	111			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	75			70-130	Pass	
Acenaphthylene	%	82			70-130	Pass	
Anthracene	%	75			70-130	Pass	
Benz(a)anthracene	%	71			70-130	Pass	
Benzo(a)pyrene	%	73			70-130	Pass	
Benzo(b&j)fluoranthene	%	73			70-130	Pass	
Benzo(g.h.i)perylene	%	73			70-130	Pass	
Benzo(k)fluoranthene	%	78			70-130	Pass	
Chrysene	%	71			70-130	Pass	
Dibenz(a.h)anthracene	%	72			70-130	Pass	
Fluoranthene	%	71			70-130	Pass	
Fluorene	%	82			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	73			70-130	Pass	
Naphthalene	%	76			70-130	Pass	
Phenanthrene	%	77			70-130	Pass	
Pyrene	%	70			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	81			70-130	Pass	
4.4'-DDD	%	81			70-130	Pass	
4.4'-DDE	%	79			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDT	%	81			70-130	Pass	
a-HCH	%	81			70-130	Pass	
Aldrin	%	77			70-130	Pass	
b-HCH	%	88			70-130	Pass	
d-HCH	%	87			70-130	Pass	
Dieldrin	%	88			70-130	Pass	
Endosulfan I	%	89			70-130	Pass	
Endosulfan II	%	80			70-130	Pass	
Endosulfan sulphate	%	70			70-130	Pass	
Endrin	%	91			70-130	Pass	
Endrin aldehyde	%	81			70-130	Pass	
Endrin ketone	%	78			70-130	Pass	
g-HCH (Lindane)	%	90			70-130	Pass	
Heptachlor	%	109			70-130	Pass	
Heptachlor epoxide	%	83			70-130	Pass	
Hexachlorobenzene	%	80			70-130	Pass	
Methoxychlor	%	114			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	77			70-130	Pass	
Dimethoate	%	102			70-130	Pass	
Ethion	%	119			70-130	Pass	
Fenitrothion	%	121			70-130	Pass	
Mevinphos	%	112			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	72			70-130	Pass	
Aroclor-1260	%	74			70-130	Pass	
LCS - % Recovery							
Heavy Metals							
Arsenic	%	101			80-120	Pass	
Cadmium	%	104			80-120	Pass	
Chromium	%	100			80-120	Pass	
Copper	%	101			80-120	Pass	
Lead	%	102			80-120	Pass	
Mercury	%	119			80-120	Pass	
Nickel	%	99			80-120	Pass	
Zinc	%	98			80-120	Pass	
LCS - % Recovery							
Total Organic Carbon	%	93			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C9	S21-De51738	NCP	%	78			70-130	Pass	
TRH C10-C14	N21-De47046	NCP	%	85			70-130	Pass	
Naphthalene	S21-De51738	NCP	%	102			70-130	Pass	
TRH C6-C10	S21-De51738	NCP	%	78			70-130	Pass	
TRH >C10-C16	N21-De47046	NCP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S21-De51738	NCP	%	98			70-130	Pass	
Toluene	S21-De51738	NCP	%	88			70-130	Pass	
Ethylbenzene	S21-De51738	NCP	%	90			70-130	Pass	
m&p-Xylenes	S21-De51738	NCP	%	91			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
o-Xylene	S21-De51738	NCP	%	94			70-130	Pass	
Xylenes - Total*	S21-De51738	NCP	%	92			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S21-De56936	NCP	%	76			70-130	Pass	
Acenaphthylene	S21-De56936	NCP	%	90			70-130	Pass	
Anthracene	S21-De56936	NCP	%	75			70-130	Pass	
Benz(a)anthracene	S21-De56936	NCP	%	75			70-130	Pass	
Benzo(a)pyrene	S21-De56936	NCP	%	79			70-130	Pass	
Benzo(b&j)fluoranthene	S21-De56936	NCP	%	79			70-130	Pass	
Benzo(g.h.i)perylene	S21-De56936	NCP	%	78			70-130	Pass	
Benzo(k)fluoranthene	S21-De56936	NCP	%	84			70-130	Pass	
Chrysene	S21-De56936	NCP	%	74			70-130	Pass	
Dibenz(a.h)anthracene	S21-De56936	NCP	%	78			70-130	Pass	
Fluoranthene	S21-De56936	NCP	%	76			70-130	Pass	
Fluorene	S21-De56936	NCP	%	85			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S21-De56936	NCP	%	79			70-130	Pass	
Naphthalene	S21-De56936	NCP	%	81			70-130	Pass	
Phenanthrene	S21-De56936	NCP	%	79			70-130	Pass	
Pyrene	S21-De56936	NCP	%	75			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S21-De56936	NCP	%	96			70-130	Pass	
4.4'-DDD	S21-De56936	NCP	%	98			70-130	Pass	
4.4'-DDE	S21-De56936	NCP	%	93			70-130	Pass	
4.4'-DDT	S21-De56936	NCP	%	102			70-130	Pass	
a-HCH	S21-De56936	NCP	%	95			70-130	Pass	
Aldrin	S21-De56936	NCP	%	90			70-130	Pass	
b-HCH	S21-De56936	NCP	%	102			70-130	Pass	
d-HCH	S21-De56936	NCP	%	98			70-130	Pass	
Dieldrin	S21-De56936	NCP	%	103			70-130	Pass	
Endosulfan I	S21-De56936	NCP	%	103			70-130	Pass	
Endosulfan II	S21-De56936	NCP	%	97			70-130	Pass	
Endosulfan sulphate	S21-De56945	NCP	%	72			70-130	Pass	
Endrin	S21-De56936	NCP	%	122			70-130	Pass	
Endrin ketone	S21-De56936	NCP	%	74			70-130	Pass	
g-HCH (Lindane)	S21-De56936	NCP	%	102			70-130	Pass	
Heptachlor	S21-De56936	NCP	%	130			70-130	Pass	
Heptachlor epoxide	S21-De56936	NCP	%	101			70-130	Pass	
Hexachlorobenzene	S21-De56936	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	S21-De56945	NCP	%	77			70-130	Pass	
Ethion	S21-De56945	NCP	%	86			70-130	Pass	
Fenitrothion	S21-De56945	NCP	%	82			70-130	Pass	
Methyl parathion	S21-De56945	NCP	%	102			70-130	Pass	
Mevinphos	S21-De56945	NCP	%	78			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S21-De57650	NCP	%	77			70-130	Pass	
Aroclor-1260	S21-De57650	NCP	%	86			70-130	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Copper	S21-De45828	NCP	%	101			75-125	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Zinc	S21-De54650	NCP	%	87			75-125	Pass	
Spike - % Recovery									
Heavy Metals				Result 1					
Arsenic	S21-De49281	CP	%	88			75-125	Pass	
Cadmium	S21-De49281	CP	%	95			75-125	Pass	
Chromium	S21-De49281	CP	%	81			75-125	Pass	
Lead	S21-De49281	CP	%	84			75-125	Pass	
Mercury	S21-De49281	CP	%	79			75-125	Pass	
Nickel	S21-De49281	CP	%	79			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C9	S21-De51606	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Naphthalene	S21-De51606	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	S21-De51606	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S21-De51606	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S21-De51606	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S21-De51606	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S21-De51606	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S21-De51606	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S21-De51606	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S21-De54682	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S21-De54682	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S21-De54682	NCP	mg/kg	< 2	< 2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Demeton-S	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S21-De54682	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S21-De54682	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S21-De54682	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S21-De54682	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-De49273	CP	mg/kg	7.7	5.5	33	30%	Fail	Q15
Cadmium	S21-De49273	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-De49273	CP	mg/kg	21	15	31	30%	Fail	Q15
Copper	S21-De49273	CP	mg/kg	14	11	26	30%	Pass	
Lead	S21-De49273	CP	mg/kg	16	15	7.0	30%	Pass	
Mercury	S21-De49273	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-De49273	CP	mg/kg	5.3	5.1	4.0	30%	Pass	
Zinc	S21-De49273	CP	mg/kg	35	33	4.0	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	N21-De47916	NCP	%	18	18	1.0	30%	Pass	

Duplicate									
Heavy Metals				Result 1	Result 2	RPD			
Arsenic	S21-De49275	CP	mg/kg	7.9	4.4	56	30%	Fail	Q15
Cadmium	S21-De49275	CP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S21-De49275	CP	mg/kg	37	32	15	30%	Pass	
Copper	S21-De49275	CP	mg/kg	32	22	37	30%	Fail	Q15
Lead	S21-De49275	CP	mg/kg	13	12	8.0	30%	Pass	
Mercury	S21-De49275	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S21-De49275	CP	mg/kg	15	14	7.0	30%	Pass	
Zinc	S21-De49275	CP	mg/kg	37	30	21	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
Conductivity (1:5 aqueous extract at 25°C as rec.)	M21-De53508	NCP	uS/cm	49	52	6.3	30%	Pass	
pH (1:5 Aqueous extract at 25°C as rec.)	N21-De38147	NCP	pH Units	6.7	6.8	<1	30%	Pass	
Total Organic Carbon	M21-De52214	NCP	%	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C10-C14	S21-De49287	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S21-De49287	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S21-De49287	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C10-C16	S21-De49287	CP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S21-De49287	CP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S21-De49287	CP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(a)pyrene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(b&j)fluoranthene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(g.h.i)perylene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Chrysene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Dibenz(a.h)anthracene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluorene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Pyrene	S21-De49287	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	

Comments

Sample Integrity

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

Qualifier Codes/Comments

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

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
Charl Du Preez	Senior Analyst-Inorganic (NSW)
Scott Beddoes	Senior Analyst-Inorganic (VIC)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Emily Rosenberg	Senior Analyst-Metal (VIC)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood				
Report Results to:	Matthew Locke	Mobile:		Email:	matthew.locke@tetratech.com
Invoices to:	general.admin@coffey.com	Phone:		Email:	delfa.sarabia@tetratech.com

Project No:	SYDGE295047	Task No:	
Project Name:	St George	Laboratory:	Eurofins
Sampler's Name:	Richard Sanchez ~~Cameron Prentice~~	Project Manager:	Delfa Sarabia /Sven Padina
Quote number (if different to current quoted prices):			
Special Instructions:			

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS	ON HOLD		NOTES
	BH3 0.1-0.2	11-1-22		Soil	1xJ, 1xA	HOLD												X		Container Types:
	BH3 0.4-0.5	↓		↓	1xJ	↓												X		P= PFAS Jar
	BH3 0.9-1.0				1xJ													X		J= Glass jar
	BH3 3-3.45				1xJ													X		A= Asbestos bag
																				ASS= Acid Sulfate bag

Analysis Request Section

RELINQUISHED BY			RECEIVED BY		
Name: Richard Sanchez	Date: 11-1-22	→	Name: Lily Cains	Date: 11/01/22	
Coffey	Time:		Company: Eurofins	Time: 4:00 pm	
Name:	Date:	→	Name:	Date:	
Company:	Time:		Company:	Time:	

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No. ☐ 7.2°C

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 854654

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood

Report Results to: Matthew Locke — Mobile: — Email: matthew.locke@tetratech.com

Invoices to: general.admin@coffey.com — Phone: — Email: delfa.sarabia@tetratech.com

Project No: SYDGE295047 — Task No:

Project Name: St George — Laboratory: Eurofins

Sampler's Name: Richard Sanchez ~~Cameron Brammer~~ — Project Manager: Delfa Sarabia /Sveg Padina

Quote number (If different to current quoted prices):

Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil,..etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS	ASS Screning	SPOCAS	Chromium reducible sulfur	NOTES
	BH3 0.1-0.2	11-1-22		Soil	1xJ 1xA	Normal	/	/	/	/								Container Types:
	BH3 0.4-0.5	↓		↓	1xJ													P= PFAS Jar
	BH3 0.9-1.0				1xJ	STANDARD TAT		/	/									J= Glass jar
	BH3 3-3.45				1xJ	↓												A= Asbestos bag
																		ASS= Acid Sulfate bag

RELINQUISHED BY

Name: Richard Sanchez Coffey — Date: 11-1-22 — Time:

Name: — Date: — Company: — Time:

RECEIVED BY

Name: Lily Cains — Date: 11/01/22 — Company: Eurofins — Time: 4:00 pm

Name: — Date: — Company: — Time:

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved In Good Condition ☐

All Documentation Is in Proper Order ☐

Samples Received Properly Chilled ☐

Lab. Ref/Batch No. 7.2°C

Report: 854654

Hannah M

12/01/22 - 3:56PM

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www.eurofins.com.au EnviroSales@eurofins.com

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NATA # 1261 Site # 18217

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NATA # 1261 Site # 20794

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	10 Day
Date/Time received	Jan 12, 2022 3:56 PM
Eurofins reference	854654

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 7.2 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.
X	Split sample sent to requested external lab.
X	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 854654
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 12, 2022 3:56 PM
Due: Jan 27, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH3_0.1-0.2	Jan 11, 2022		Soil	W22-Ja06020	X		X	X	X	X
2	BH3_0.4-0.5	Jan 11, 2022		Soil	W22-Ja06021		X				
3	BH3_0.9-1.0	Jan 11, 2022		Soil	W22-Ja06022			X	X	X	X
4	BH3_3-3.45	Jan 11, 2022		Soil	W22-Ja06023			X		X	X
Test Counts						1	1	3	2	3	3

Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Matthew Locke
Report	854654-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Jan 12, 2022
Date Reported	Jan 28, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Jan 11, 2022
Report 854654-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH3_0.1-0.2	22-Ja06020	Jan 11, 2022	Approximate Sample 188g Sample consisted of: Brown fine-grained clayey soil and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jan 19, 2022	Indefinite

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NATA # 1261 Site # 25079

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 854654
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 12, 2022 3:56 PM
Due: Jan 27, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH3_0.1-0.2	Jan 11, 2022		Soil	W22-Ja06020	X		X	X	X	X
2	BH3_0.4-0.5	Jan 11, 2022		Soil	W22-Ja06021		X				
3	BH3_0.9-1.0	Jan 11, 2022		Soil	W22-Ja06022			X	X	X	X
4	BH3_3-3.45	Jan 11, 2022		Soil	W22-Ja06023			X		X	X
Test Counts						1	1	3	2	3	3

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Bennel Jiri	Senior Analyst-Asbestos (NSW)

Authorised by:

Chamath JHM Annakkage	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **854654-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Jan 12, 2022

Client Sample ID			**BH3_0.1-0.2**	**BH3_0.9-1.0**	**BH3_3-3.45**
Sample Matrix			**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**W22-Ja06020**	**W22-Ja06022**	**W22-Ja06023**
Date Sampled			**Jan 11, 2022**	**Jan 11, 2022**	**Jan 11, 2022**
Test/Reference	LOR	Unit			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions					
TRH C6-C9	20	mg/kg	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	< 20	< 20	< 20
TRH C15-C28	50	mg/kg	< 50	< 50	< 50
TRH C29-C36	50	mg/kg	< 50	< 50	< 50
TRH C10-C36 (Total)	50	mg/kg	< 50	< 50	< 50
BTEX					
Benzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	98	113	94
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
Naphthalene[N02]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	< 50	< 50
TRH C6-C10	20	mg/kg	< 20	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	< 20	< 20
Polycyclic Aromatic Hydrocarbons					
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	1.2	1.2
Acenaphthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Chrysene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Fluorene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5

Client Sample ID			BH3_0.1-0.2	BH3_0.9-1.0	BH3_3-3.45
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			W22-Ja06020	W22-Ja06022	W22-Ja06023
Date Sampled			Jan 11, 2022	Jan 11, 2022	Jan 11, 2022
Test/Reference	LOR	Unit			
Polycyclic Aromatic Hydrocarbons					
Naphthalene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Pyrene	0.5	mg/kg	< 0.5	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	< 0.5	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	97	102	105
p-Terphenyl-d14 (surr.)	1	%	104	109	118
Organochlorine Pesticides					
Chlordanes - Total	0.1	mg/kg	< 0.1	< 0.1	-
4.4'-DDD	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDE	0.05	mg/kg	< 0.05	< 0.05	-
4.4'-DDT	0.05	mg/kg	< 0.05	< 0.05	-
a-HCH	0.05	mg/kg	< 0.05	< 0.05	-
Aldrin	0.05	mg/kg	< 0.05	< 0.05	-
b-HCH	0.05	mg/kg	< 0.05	< 0.05	-
d-HCH	0.05	mg/kg	< 0.05	< 0.05	-
Dieldrin	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan I	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan II	0.05	mg/kg	< 0.05	< 0.05	-
Endosulfan sulphate	0.05	mg/kg	< 0.05	< 0.05	-
Endrin	0.05	mg/kg	< 0.05	< 0.05	-
Endrin aldehyde	0.05	mg/kg	< 0.05	< 0.05	-
Endrin ketone	0.05	mg/kg	< 0.05	< 0.05	-
g-HCH (Lindane)	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor	0.05	mg/kg	< 0.05	< 0.05	-
Heptachlor epoxide	0.05	mg/kg	< 0.05	< 0.05	-
Hexachlorobenzene	0.05	mg/kg	< 0.05	< 0.05	-
Methoxychlor	0.05	mg/kg	< 0.05	< 0.05	-
Toxaphene	0.5	mg/kg	< 0.5	< 0.5	-
Aldrin and Dieldrin (Total)*	0.05	mg/kg	< 0.05	< 0.05	-
DDT + DDE + DDD (Total)*	0.05	mg/kg	< 0.05	< 0.05	-
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	102	108	-
Tetrachloro-m-xylene (surr.)	1	%	96	104	-
Organophosphorus Pesticides					
Azinphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Bolstar	0.2	mg/kg	< 0.2	< 0.2	-
Chlorfenvinphos	0.2	mg/kg	< 0.2	< 0.2	-
Chlorpyrifos	0.2	mg/kg	< 0.2	< 0.2	-
Chlorpyrifos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Coumaphos	2	mg/kg	< 2	< 2	-
Demeton-S	0.2	mg/kg	< 0.2	< 0.2	-
Demeton-O	0.2	mg/kg	< 0.2	< 0.2	-
Diazinon	0.2	mg/kg	< 0.2	< 0.2	-
Dichlorvos	0.2	mg/kg	< 0.2	< 0.2	-
Dimethoate	0.2	mg/kg	< 0.2	< 0.2	-
Disulfoton	0.2	mg/kg	< 0.2	< 0.2	-
EPN	0.2	mg/kg	< 0.2	< 0.2	-
Ethion	0.2	mg/kg	< 0.2	< 0.2	-

Client Sample ID			BH3_0.1-0.2	BH3_0.9-1.0	BH3_3-3.45
Sample Matrix			Soil	Soil	Soil
Eurofins Sample No.			W22-Ja06020	W22-Ja06022	W22-Ja06023
Date Sampled			Jan 11, 2022	Jan 11, 2022	Jan 11, 2022
Test/Reference	LOR	Unit			
Organophosphorus Pesticides					
Ethoprop	0.2	mg/kg	< 0.2	< 0.2	-
Ethyl parathion	0.2	mg/kg	< 0.2	< 0.2	-
Fenitrothion	0.2	mg/kg	< 0.2	< 0.2	-
Fensulfothion	0.2	mg/kg	< 0.2	< 0.2	-
Fenthion	0.2	mg/kg	< 0.2	< 0.2	-
Malathion	0.2	mg/kg	< 0.2	< 0.2	-
Merphos	0.2	mg/kg	< 0.2	< 0.2	-
Methyl parathion	0.2	mg/kg	< 0.2	< 0.2	-
Mevinphos	0.2	mg/kg	< 0.2	< 0.2	-
Monocrotophos	2	mg/kg	< 2	< 2	-
Naled	0.2	mg/kg	< 0.2	< 0.2	-
Omethoate	2	mg/kg	< 2	< 2	-
Phorate	0.2	mg/kg	< 0.2	< 0.2	-
Pirimiphos-methyl	0.2	mg/kg	< 0.2	< 0.2	-
Pyrazophos	0.2	mg/kg	< 0.2	< 0.2	-
Ronnel	0.2	mg/kg	< 0.2	< 0.2	-
Terbufos	0.2	mg/kg	< 0.2	< 0.2	-
Tetrachlorvinphos	0.2	mg/kg	< 0.2	< 0.2	-
Tokuthion	0.2	mg/kg	< 0.2	< 0.2	-
Trichloronate	0.2	mg/kg	< 0.2	< 0.2	-
Triphenylphosphate (surr.)	1	%	99	105	-
Polychlorinated Biphenyls					
Aroclor-1016	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1221	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1232	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1242	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1248	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1254	0.1	mg/kg	< 0.1	< 0.1	-
Aroclor-1260	0.1	mg/kg	< 0.1	< 0.1	-
Total PCB*	0.1	mg/kg	< 0.1	< 0.1	-
Dibutylchlorendate (surr.)	1	%	102	108	-
Tetrachloro-m-xylene (surr.)	1	%	96	104	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions					
TRH >C10-C16	50	mg/kg	< 50	< 50	< 50
TRH >C16-C34	100	mg/kg	< 100	< 100	< 100
TRH >C34-C40	100	mg/kg	< 100	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	< 100	< 100	< 100
Metals M8					
Arsenic	2	mg/kg	5.5	6.0	4.4
Cadmium	0.4	mg/kg	< 0.4	< 0.4	< 0.4
Chromium	5	mg/kg	7.6	22	21
Copper	5	mg/kg	24	31	32
Lead	5	mg/kg	25	16	14
Mercury	0.1	mg/kg	< 0.1	< 0.1	< 0.1
Nickel	5	mg/kg	14	9.2	11
Zinc	5	mg/kg	82	28	23
% Moisture	1	%	24	26	19

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Eurofins Suite B4			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jan 19, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Metals M8	Sydney	Jan 19, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
% Moisture	Sydney	Jan 19, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			

eurofins | Environment Testing

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Project Name: ST GEORGE
Project ID: SYDGE295047

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Received: Jan 12, 2022 3:56 PM
Due: Jan 27, 2022
Priority: 10 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Metals M8	Eurofins Suite B15	Moisture Set	Eurofins Suite B4
Melbourne Laboratory - NATA # 1261 Site # 1254											
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794											
Mayfield Laboratory - NATA # 1261 Site # 25079											
Perth Laboratory - NATA # 2377 Site # 2370											
External Laboratory											
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**						
1	BH3_0.1-0.2	Jan 11, 2022		Soil	W22-Ja06020	X		X	X	X	X
2	BH3_0.4-0.5	Jan 11, 2022		Soil	W22-Ja06021		X				
3	BH3_0.9-1.0	Jan 11, 2022		Soil	W22-Ja06022			X	X	X	X
4	BH3_3-3.45	Jan 11, 2022		Soil	W22-Ja06023			X		X	X
Test Counts						1	1	3	2	3	3

Date Reported:Jan 28, 2022

Date Reported:Jan 28, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	80			70-130	Pass	
TRH C10-C14	%	114			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	84			70-130	Pass	
Toluene	%	85			70-130	Pass	
Ethylbenzene	%	85			70-130	Pass	
m&p-Xylenes	%	86			70-130	Pass	
o-Xylene	%	88			70-130	Pass	
Xylenes - Total*	%	87			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	73			70-130	Pass	
TRH C6-C10	%	79			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	110			70-130	Pass	
Acenaphthylene	%	114			70-130	Pass	
Anthracene	%	115			70-130	Pass	
Benz(a)anthracene	%	105			70-130	Pass	
Benzo(a)pyrene	%	101			70-130	Pass	
Benzo(b&j)fluoranthene	%	119			70-130	Pass	
Benzo(g.h.i)perylene	%	92			70-130	Pass	
Benzo(k)fluoranthene	%	102			70-130	Pass	
Chrysene	%	97			70-130	Pass	
Dibenz(a.h)anthracene	%	97			70-130	Pass	
Fluoranthene	%	115			70-130	Pass	
Fluorene	%	118			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	103			70-130	Pass	
Naphthalene	%	116			70-130	Pass	
Phenanthrene	%	112			70-130	Pass	
Pyrene	%	114			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	99			70-130	Pass	
4.4'-DDD	%	91			70-130	Pass	
4.4'-DDE	%	91			70-130	Pass	
4.4'-DDT	%	96			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
a-HCH	%	90			70-130	Pass	
Aldrin	%	97			70-130	Pass	
b-HCH	%	95			70-130	Pass	
d-HCH	%	93			70-130	Pass	
Dieldrin	%	105			70-130	Pass	
Endosulfan I	%	91			70-130	Pass	
Endosulfan II	%	89			70-130	Pass	
Endosulfan sulphate	%	82			70-130	Pass	
Endrin	%	103			70-130	Pass	
Endrin aldehyde	%	95			70-130	Pass	
Endrin ketone	%	98			70-130	Pass	
g-HCH (Lindane)	%	96			70-130	Pass	
Heptachlor	%	90			70-130	Pass	
Heptachlor epoxide	%	101			70-130	Pass	
Hexachlorobenzene	%	97			70-130	Pass	
Methoxychlor	%	114			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	71			70-130	Pass	
Dimethoate	%	123			70-130	Pass	
Ethion	%	73			70-130	Pass	
Fenitrothion	%	74			70-130	Pass	
Methyl parathion	%	83			70-130	Pass	
Mevinphos	%	114			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	92			70-130	Pass	
Aroclor-1260	%	83			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	105			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	107			80-120	Pass	
Cadmium	%	107			80-120	Pass	
Chromium	%	115			80-120	Pass	
Copper	%	114			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	97			80-120	Pass	
Nickel	%	114			80-120	Pass	
Zinc	%	110			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	N22-Ja15002	NCP	%	125			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ja20126	NCP	%	116			70-130	Pass	
Acenaphthylene	S22-Ja20126	NCP	%	115			70-130	Pass	
Anthracene	S22-Ja20126	NCP	%	118			70-130	Pass	
Benz(a)anthracene	S22-Ja20126	NCP	%	107			70-130	Pass	
Benzo(a)pyrene	S22-Ja20126	NCP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ja20126	NCP	%	128			70-130	Pass	
Benzo(g.h.i)perylene	S22-Ja20126	NCP	%	89			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Benzo(k)fluoranthene	S22-Ja20126	NCP	%	102			70-130	Pass	
Chrysene	S22-Ja20126	NCP	%	101			70-130	Pass	
Dibenz(a.h)anthracene	S22-Ja20126	NCP	%	89			70-130	Pass	
Fluoranthene	S22-Ja20126	NCP	%	121			70-130	Pass	
Fluorene	S22-Ja20126	NCP	%	124			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja20126	NCP	%	100			70-130	Pass	
Naphthalene	S22-Ja20126	NCP	%	122			70-130	Pass	
Phenanthrene	S22-Ja20126	NCP	%	116			70-130	Pass	
Pyrene	S22-Ja20126	NCP	%	123			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ja20126	NCP	%	107			70-130	Pass	
4.4'-DDD	S22-Ja20126	NCP	%	93			70-130	Pass	
4.4'-DDE	S22-Ja20126	NCP	%	102			70-130	Pass	
4.4'-DDT	S22-Ja20126	NCP	%	92			70-130	Pass	
a-HCH	S22-Ja20126	NCP	%	93			70-130	Pass	
Aldrin	S22-Ja20126	NCP	%	106			70-130	Pass	
b-HCH	S22-Ja20126	NCP	%	98			70-130	Pass	
d-HCH	S22-Ja20126	NCP	%	99			70-130	Pass	
Dieldrin	S22-Ja20126	NCP	%	114			70-130	Pass	
Endosulfan I	S22-Ja20126	NCP	%	100			70-130	Pass	
Endosulfan II	S22-Ja20126	NCP	%	94			70-130	Pass	
Endosulfan sulphate	S22-Ja20126	NCP	%	80			70-130	Pass	
Endrin	S22-Ja20126	NCP	%	113			70-130	Pass	
Endrin aldehyde	S22-Ja20126	NCP	%	86			70-130	Pass	
Endrin ketone	S22-Ja20126	NCP	%	103			70-130	Pass	
g-HCH (Lindane)	S22-Ja20126	NCP	%	96			70-130	Pass	
Heptachlor	S22-Ja20126	NCP	%	94			70-130	Pass	
Heptachlor epoxide	S22-Ja20126	NCP	%	102			70-130	Pass	
Hexachlorobenzene	S22-Ja20126	NCP	%	107			70-130	Pass	
Methoxychlor	S22-Ja20126	NCP	%	102			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Diazinon	S22-Ja20126	NCP	%	73			70-130	Pass	
Dimethoate	S22-Ja14724	NCP	%	110			70-130	Pass	
Ethion	S22-Ja20126	NCP	%	85			70-130	Pass	
Mevinphos	S22-Ja14724	NCP	%	121			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S22-Ja20126	NCP	%	103			70-130	Pass	
Aroclor-1260	S22-Ja20126	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	N22-Ja15002	NCP	%	119			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S22-Ja17311	NCP	%	109			75-125	Pass	
Cadmium	S22-Ja17311	NCP	%	108			75-125	Pass	
Chromium	S22-Ja17311	NCP	%	124			75-125	Pass	
Copper	S22-Ja17311	NCP	%	105			75-125	Pass	
Lead	S22-Ja17311	NCP	%	106			75-125	Pass	
Mercury	S22-Ja17311	NCP	%	105			75-125	Pass	
Nickel	S22-Ja17311	NCP	%	103			75-125	Pass	
Zinc	S22-Ja17311	NCP	%	87			75-125	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	W22-Ja06022	CP	%	86			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	W22-Ja06022	CP	%	87			70-130	Pass	
Toluene	W22-Ja06022	CP	%	87			70-130	Pass	
Ethylbenzene	W22-Ja06022	CP	%	89			70-130	Pass	
m&p-Xylenes	W22-Ja06022	CP	%	91			70-130	Pass	
o-Xylene	W22-Ja06022	CP	%	90			70-130	Pass	
Xylenes - Total*	W22-Ja06022	CP	%	91			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
Naphthalene	W22-Ja06022	CP	%	72			70-130	Pass	
TRH C6-C10	W22-Ja06022	CP	%	82			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	W22-Ja06020	CP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C10-C14	S22-Ja18526	NCP	mg/kg	28	< 20	48	30%	Fail	Q15
TRH C15-C28	S22-Ja18526	NCP	mg/kg	160	150	10	30%	Pass	
TRH C29-C36	S22-Ja18526	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	W22-Ja06020	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	W22-Ja06020	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	W22-Ja06020	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	W22-Ja06020	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	W22-Ja06020	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	W22-Ja06020	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	W22-Ja06020	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	W22-Ja06020	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ja20125	NCP	mg/kg	1.0	1.1	6.0	30%	Pass	
Benzo(a)pyrene	S22-Ja20125	NCP	mg/kg	1.1	1.3	21	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ja20125	NCP	mg/kg	0.9	1.1	29	30%	Pass	
Benzo(g.h.i)perylene	S22-Ja20125	NCP	mg/kg	0.7	0.9	22	30%	Pass	
Benzo(k)fluoranthene	S22-Ja20125	NCP	mg/kg	1.2	1.1	1.0	30%	Pass	
Chrysene	S22-Ja20125	NCP	mg/kg	0.9	0.9	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ja20125	NCP	mg/kg	1.5	1.3	15	30%	Pass	
Fluorene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja20125	NCP	mg/kg	0.6	0.8	28	30%	Pass	
Naphthalene	S22-Ja20125	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ja20125	NCP	mg/kg	0.6	0.5	5.0	30%	Pass	
Pyrene	S22-Ja20125	NCP	mg/kg	1.7	1.5	8.0	30%	Pass	

Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ja20125	NCP	mg/kg	0.07	0.06	25	30%	Pass	
4.4'-DDT	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
a-HCH	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ja20125	NCP	mg/kg	0.07	< 0.05	33	30%	Fail	Q15
Endrin ketone	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ja20125	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Ja16419	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S22-Ja20125	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S22-Ja20125	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S22-Ja20125	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Tetrachlorvinphos	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S22-Ja20125	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ja20125	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S22-Ja18526	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Ja18526	NCP	mg/kg	160	150	9.0	30%	Pass	
TRH >C34-C40	S22-Ja18526	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S22-Ja17668	NCP	mg/kg	4.1	3.6	14	30%	Pass	
Cadmium	S22-Ja17668	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ja17668	NCP	mg/kg	37	27	32	30%	Fail	Q15
Copper	S22-Ja17668	NCP	mg/kg	30	27	12	30%	Pass	
Lead	S22-Ja17668	NCP	mg/kg	18	16	12	30%	Pass	
Mercury	S22-Ja17668	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ja17668	NCP	mg/kg	11	9.5	11	30%	Pass	
Zinc	S22-Ja17668	NCP	mg/kg	370	340	10	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	S22-Ja12767	NCP	%	4.3	3.1	33	30%	Fail	Q15
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	W22-Ja06023	CP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	W22-Ja06023	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	W22-Ja06023	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	W22-Ja06023	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	W22-Ja06023	CP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	W22-Ja06023	CP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	W22-Ja06023	CP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	W22-Ja06023	CP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
TRH C6-C10	W22-Ja06023	CP	mg/kg	< 20	< 20	<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
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Asim Khan	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood				
Report Results to:	Matthew Locke	Mobile:		Email:	matthew.locke@tetratech.com
Invoices to:	general.admin@coffey.com	Phone:		Email:	delfa.sarabia@tetratech.com

Project No:	SYDGE295047	Task No:	
Project Name:	St George	Laboratory:	Eurofins
Sampler's Name:	Richard Sanchez ~~Cameron Prentise~~	Project Manager:	Delfa Sarabia / Sven Padinha
Quote number (if different to current quoted prices):			
Special Instructions:			

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)
	RB 3	14-1-22		Water	2x Plastic Bottles	
	RB 3	14-1-22		Water	3x Glass Bottles	
	TRIP Spike					
	Soil Trip Blank					
	BH1B_0.0-0.1	14-1-22		Soil	1xPFAS	
	BH1B_0.1-0.2	14-1-22		Soil	1xAsb, 1xJar	
	DUP 4	↓		↓	1xJar	
	TRIP 4				1xJ	
	BH10_0.4-0.5				1xJ	
	BH10_0.9-1.0				1xJ	
	BH10_1.5-1.95				1xASS	
	" "_3.0-3.45				1xJ	
	" "_4.5-4.95	↓		↓	1xJ	

Analysis Request Section

Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS	CN (10 LD)		NOTES
											X		Container Types:
											X		P= PFAS Jar
											X		J= Glass jar
											X		A= Asbestos bag
											X		ASS= Acid Sulfate bag
											X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		
											X		

RELINQUISHED BY

Name:	Richard Sanchez	Date:	14-01-2022
Coffey		Time:	
Name:		Date:	
Company:		Time:	

RECEIVED BY

Name:	Lily Cains	Date:	14/01/22
Company:	Eurofins	Time:	4:00 pm
Name:		Date:	
Company:		Time:	

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No. ____ 9.6°C

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 855638

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH

Consigning Office: Chatswood
Report Results to: Matthew Locke Mobile: Email: matthew.locke@tetratech.com
Invoices to: general.admin@coffey.com Phone: Email: delfa.sarabia@tetratech.com

Project No: SYDGE295047 Task No:
Project Name: St George Laboratory: Eurofins
Sampler's Name: Richard Sanchez ~~Cameron Prentice~~ Project Manager: Delfa Sarabia / Sven Pudina
Quote number (if different to current quoted prices):
Special Instructions:

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS	ASS Screening	SPOCAS	ANALYSIS ON HOLD	V. TRH + BTEX
	RB 3	14-1-22		Water	2x plastic Bottles	STANDARD TAT	X	X	X									
	EB 3	14-1-22		Water	3x Glass Bottles													
	Trip Spike																	
	Soil Trip Blank																	
	BH1B_0.0-0.1	14-1-22		Soil	1xPFAS													
	BH1B_0.1-0.2	14-1-22		Soil	1x Asb, 1x Jar		X	X	X	X								
	DUP 4				1x Jar		X	X	X									
	TRIP 4				1x S		X	X	X									
	BH10_0.4-0.5				1x S													
	BH10_0.9-1.0				1x S		X	X										
	BH10_1.5-1.95				1x ASS											X		
	" " 3.0-3.45				1x S													
	" " 4.5-4.95				1x S													

NOTES

Container Types:
P= PFAS Jar
J= Glass Jar
A= Asbestos bag
ASS= Acid Sulfate bag

SEND TO ALS

RELINQUISHED BY

Name: Richard Sanchez Date: 14-01-2022
Coffey Time:
Name: Date:
Company: Time:

RECEIVED BY

Name: Lily Cains Date: 14/01/22
Company: Eurofins Time: 4.00 pm
Name: Date:
Company: Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved In Good Condition ☐
All Documentation Is In Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No. 9.6°C

*Container Type & Preservation Codes: P - Plastic, G- Glass Bottle, J - Glass Jar, V- Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Report: 855638

Received: 17/1/22 @ 5.37 pm
Lily Cains

Hannah Mawbey

From: Locke, Matthew <Matthew.Locke@coffey.com>
Sent: Monday, 17 January 2022 5:37 PM
To: #AU04_EnvirosampleWOLL
Subject: RE: Eurofins Sample Receipt Advice - Report 855638 : Site ST GEORGE (SYDGE295047)
Attachments: SYDGE295047_COC_140122.pdf

EXTERNAL EMAIL*

Dear Eurofins
Please find enclosed a completed COC with testing instructions for Batch 855638
Please confirm receipt.

Regards
Matt

From: EnviroSampleWoll@eurofins.com <EnviroSampleWoll@eurofins.com>
Sent: Monday, 17 January 2022 11:39 AM
To: Locke, Matthew <Matthew.Locke@coffey.com>
Subject: Eurofins Sample Receipt Advice - Report 855638 : Site ST GEORGE (SYDGE295047)

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 Analytical Services Manager as soon as possible to make certain that they get changed.

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www.eurofins.com.au EnviroSales@eurofins.com

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Christchurch
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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Jan 17, 2022 5:37 PM
Eurofins reference	855638

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 9.6 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.
✓	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample TRIP4 sent to ALS for analysis as requested.
Samples received by the laboratory after 5.30pm are deemed to have been received the following working day.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	RB3	Jan 14, 2022		Water	W22-Ja12143			X			X		
2	TRIP SPIKE	Jan 14, 2022		Soil	W22-Ja12144								X
3	TRIP BLANK	Jan 14, 2022		Soil	W22-Ja12145							X	
4	BH10_0-0.1	Jan 14, 2022		Soil	W22-Ja12146		X						
5	BH10_0.1-0.2	Jan 14, 2022		Soil	W22-Ja12147	X		X		X	X		
6	DUP4	Jan 14, 2022		Soil	W22-Ja12148			X		X	X		
7	BH10_0.4-0.5	Jan 14, 2022		Soil	W22-Ja12150		X						
8	BH10_0.9-1.0	Jan 14, 2022		Soil	W22-Ja12151					X	X		
9	BH10_1.5-1.95	Jan 14, 2022		Soil	W22-Ja12152				X				

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email: EnviroSales@eurofins.com

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Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
10	BH10_3.0-3.45	Jan 14, 2022		Soil	W22-Ja12153		X						
11	BH10_4.5-4.95	Jan 14, 2022		Soil	W22-Ja12154		X						
Test Counts						1	4	3	1	3	4	1	1

Certificate of Analysis

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highwa
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 18217

Accredited for compliance with ISO/IEC 17025–Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention:	Matthew Locke
Report	855638-AID
Project Name	ST GEORGE
Project ID	SYDGE295047
Received Date	Jan 17, 2022
Date Reported	Jan 28, 2022

Methodology:

Asbestos Fibre Identification	Conducted in accordance with the Australian Standard AS 4964 – 2004: Method for the Qualitative Identification of Asbestos in Bulk Samples and in-house Method LTM-ASB-8020 by polarised light microscopy (PLM) and dispersion staining (DS) techniques. *NOTE: Positive Trace Analysis results indicate the sample contains detectable respirable fibres.*
Unknown Mineral Fibres	Mineral fibres of unknown type, as determined by PLM with DS, may require another analytical technique, such as Electron Microscopy, to confirm unequivocal identity. *NOTE: While Actinolite, Anthophyllite and Tremolite asbestos may be detected by PLM with DS, due to variability in the optical properties of these materials, AS4964 requires that these are reported as UMF unless confirmed by an independent technique.*
Subsampling Soil Samples	The whole sample submitted is first dried and then passed through a 10mm sieve followed by a 2mm sieve. All fibrous matter greater than 10mm, greater than 2mm as well as the material passing through the 2mm sieve are retained and analysed for the presence of asbestos. If the sub 2mm fraction is greater than approximately 30 to 60g then a sub-sampling routine based on ISO 3082:2009(E) is employed. *NOTE: Depending on the nature and size of the soil sample, the sub-2 mm residue material may need to be sub-sampled for trace analysis, in accordance with AS 4964-2004.*
Bonded asbestos-containing material (ACM)	The material is first examined and any fibres isolated for identification by PLM and DS. Where required, interfering matrices may be removed by disintegration using a range of heat, chemical or physical treatments, possibly in combination.The resultant material is then further examined in accordance with AS 4964 - 2004. *NOTE: Even after disintegration it may be difficult to detect the presence of asbestos in some asbestos-containing bulk materials using PLM and DS. This is due to the low grade or small length or diameter of the asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials. Vinyl/asbestos floor tiles, some asbestos-containing sealants and mastics, asbestos-containing epoxy resins and some ore samples are examples of these types of material, which are difficult to analyse.*
Limit of Reporting	The performance limitation of the AS 4964 (2004) method for non-homogeneous samples is around 0.1 g/kg (equivalent to 0.01% (w/w)). Where no asbestos is found by PLM and DS, including Trace Analysis, this is considered to be at the nominal reporting limit of 0.01% (w/w). The NEPM screening level of 0.001% (w/w) is intended as an on-site determination, not a laboratory Limit of Reporting (LOR), per se. Examination of a large sample size (e.g. 500 mL) may improve the likelihood of detecting asbestos, particularly AF, to aid assessment against the NEPM criteria. Gravimetric determinations to this level of accuracy are outside of AS 4964 and hence NATA Accreditation does not cover the performance of this service (non-NATA results shown with an asterisk). *NOTE: NATA News March 2014, p.7, states in relation to AS 4964: "This is a qualitative method with a nominal reporting limit of 0.01 % " and that currently in Australia "there is no validated method available for the quantification of asbestos".This report is consistent with the analytical procedures and reporting recommendations in the NEPM and the WA DoH.*

Project Name ST GEORGE
Project ID SYDGE295047
Date Sampled Jan 14, 2022
Report 855638-AID

Client Sample ID	Eurofins Sample No.	Date Sampled	Sample Description	Result
BH10_0.1-0.2	22-Ja12147	Jan 14, 2022	Approximate Sample 196g Sample consisted of: Brown coarse-grained sandy soil, organic debris and rocks	No asbestos detected at the reporting limit of 0.01% w/w. Organic fibre detected. No trace asbestos detected.

Sample History

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

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

Description	Testing Site	Extracted	Holding Time
Asbestos - LTM-ASB-8020	Sydney	Jan 19, 2022	Indefinite

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ABN: 50 005 085 521

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NATA # 1261 Site # 1254

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Eurofins ARL Pty Ltd
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Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	RB3	Jan 14, 2022		Water	W22-Ja12143			X			X		
2	TRIP SPIKE	Jan 14, 2022		Soil	W22-Ja12144								X
3	TRIP BLANK	Jan 14, 2022		Soil	W22-Ja12145							X	
4	BH10_0-0.1	Jan 14, 2022		Soil	W22-Ja12146		X						
5	BH10_0.1-0.2	Jan 14, 2022		Soil	W22-Ja12147	X		X		X	X		
6	DUP4	Jan 14, 2022		Soil	W22-Ja12148			X		X	X		
7	BH10_0.4-0.5	Jan 14, 2022		Soil	W22-Ja12150		X						
8	BH10_0.9-1.0	Jan 14, 2022		Soil	W22-Ja12151					X	X		
9	BH10_1.5-1.95	Jan 14, 2022		Soil	W22-Ja12152				X				

eurofins | Environment Testing

web: www.eurofins.com.au
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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
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Received: Jan 17, 2022 5:37 PM
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Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
10	BH10_3.0-3.45	Jan 14, 2022		Soil	W22-Ja12153		X						
11	BH10_4.5-4.95	Jan 14, 2022		Soil	W22-Ja12154		X						
Test Counts						1	4	3	1	3	4	1	1

Internal Quality Control Review and Glossary General

1. QC data may be available on request.
2. All soil results are reported on a dry basis, unless otherwise stated.
3. Samples were analysed on an 'as received' basis.
4. Information identified on this report with the colour **blue** indicates data provided by customer that may have an impact on the results.
5. Information identified on this report with the colour **orange** indicates sections of the report not covered by the laboratory's scope of NATA accreditation.
6. This report replaces any interim results previously issued.

Holding Times

Please refer to the most recent version of the 'Sample Preservation and Container Guide' for holding times (QS3001).
If the Laboratory did not receive the information in the required timeframe, and regardless of any other integrity issues, suitably qualified results may still be reported. Holding times apply from the date of sampling, therefore compliance to these may be outside the laboratory's control.

Units

% w/w:	Percentage weight-for-weight basis, e.g. of asbestos in asbestos-containing finds in soil samples (**% w/w**)
F/fld	Airborne fibre filter loading as Fibres (**N**) per Fields counted (**n**)
F/mL	Airborne fibre reported concentration as Fibres per millilitre of air drawn over the sampler membrane (**C**)
g, kg	Mass, e.g. of whole sample (**M**) or asbestos-containing find within the sample (**m**)
g/kg	Concentration in grams per kilogram
L, mL	Volume, e.g. of air as measured in AFM (**V** = **r** x **t**)
L/min	Airborne fibre sampling Flowrate as litres per minute of air drawn over the sampler membrane (**r**)
min	Time (**t**), e.g. of air sample collection period

Calculations

Airborne Fibre Concentration: $C = \frac{}{a} \times \frac{}{n} \times \frac{}{r} \times \frac{}{t} = K \times \frac{}{n} \times \frac{}{V}$

Asbestos Content (as asbestos): $\%\ w/w = \frac{(m \times PA)}{M}$

Weighted Average (of asbestos): $\%_W = \Sigma \frac{(m \times P_A)_X}{X}$

Terms

%asbestos	Estimated percentage of asbestos in a given matrix. May be derived from knowledge or experience of the material, informed by HSG264 *Appendix 2*, else assumed to be 15% in accordance with WA DOH *Appendix 2* (**P_A**).
ACM	Asbestos Containing Materials. Asbestos contained within a non-asbestos matrix, typically presented in bonded (non-friable) condition. For the purposes of the NEPM and WA DOH, ACM corresponds to material larger than 7 mm x 7 mm.
AF	Asbestos Fines. Asbestos contamination within a soil sample, as defined by WA DOH. Includes loose fibre bundles and small pieces of friable and non-friable material such as asbestos cement fragments mixed with soil. Considered under the NEPM as equivalent to "non-bonded / friable".
AFM	Airborne Fibre Monitoring, e.g. by the MFM.
Amosite	Amosite Asbestos Detected. Amosite may also refer to Fibrous Grunerite or Brown Asbestos. Identified in accordance with AS 4964-2004.
AS	Australian Standard.
Asbestos Content (as asbestos)	Total % w/w asbestos content in asbestos-containing finds in a soil sample (**% w/w**).
Chrysotile	Chrysotile Asbestos Detected. Chrysotile may also refer to Fibrous Serpentine or White Asbestos. Identified in accordance with AS 4964-2004.
COC	Chain of Custody.
Compliant	Indicates the item has been assessed against the relevant criteria, e.g. NATA SAC_07.
Crocidolite	Crocidolite Asbestos Detected. Crocidolite may also refer to Fibrous Riebeckite or Blue Asbestos. Identified in accordance with AS 4964-2004.
Dry	Sample is dried by heating prior to analysis.
DS	Dispersion Staining. Technique required for Unequivocal Identification of asbestos fibres by PLM.
FA	Fibrous Asbestos. Asbestos containing material that is wholly or in part friable, including materials with higher asbestos content with a propensity to become friable with handling, and any material that was previously non-friable and in a severely degraded condition. For the purposes of the NEPM and WA DOH, FA generally corresponds to material larger than 7 mm x 7 mm, although FA may be more difficult to visibly distinguish and may be assessed as AF.
Fibre Count	Total of all fibres (whether asbestos or not) meeting the counting criteria set out in the NOHSC:3003
Fibre ID	Fibre Identification. Unequivocal identification of asbestos fibres according to AS 4964-2004. Includes Chrysotile, Amosite (Grunerite) or Crocidolite asbestos.
Friable	Asbestos-containing materials of any size that may be broken or crumbled by hand pressure. For the purposes of the NEPM, this includes both AF and FA. It is outside of the laboratory's remit to assess degree of friability.
HSG248	UK HSE HSG248, *Asbestos: The Analysts Guide*, 2nd Edition (2021).
HSG264	UK HSE HSG264, *Asbestos: The Survey Guide* (2012).
ISO (also ISO/IEC)	International Organization for Standardization / International Electrotechnical Commission.
K Factor	Microscope constant (**K**) as derived from the effective filter area of the given AFM membrane used for collecting the sample (**A**) and the projected eyepiece graticule area of the specific microscope used for the analysis (**a**).
LOR	Limit of Reporting.
MFM (also NOHSC:3003)	Membrane Filter Method. As described by the Australian Government National Occupational Health and Safety Commission, *Guidance Note on the Membrane Filter Method for Estimating Airborne Asbestos Fibres*, 2nd Edition [NOHSC:3003(2005)].
N/A	Not Applicable. Indicates a result or assessment is not required or applicable to that item.
NATA	National Association of Testing Authorities, Australia.
NEPM (also ASC NEPM)	National Environment Protection (Assessment of Site Contamination) Measure, (2013, as amended).
Organic	Organic Fibres Detected. Organic may refer to Natural or Man-Made Polymeric Fibres. Identified in accordance with AS 4964-2004.
PCM	Phase Contrast Microscopy. As used for Fibre Counting according to the MFM.
PLM	Polarised Light Microscopy. As used for Fibre Identification and Trace Analysis according to AS 4964-2004.
SAC_07	Specific Accreditation Criteria: ISO/IEC 17025 Application Document, Life Sciences – Annex, Asbestos sampling and testing.
SMF	Synthetic Mineral Fibre Detected. SMF may also refer to Man Made Vitreous Fibres. Identified in accordance with AS 4964-2004.
SRA	Sample Receipt Advice.
Trace Analysis	Analytical procedure used to detect the presence of respirable fibres (particularly asbestos) in a given sample matrix.
UK HSE HSG	United Kingdom, Health and Safety Executive, Health and Safety Guidance, publication.
UMF	Unidentified Mineral Fibre Detected. Fibrous minerals that are detected but have not been unequivocally identified by PLM with DS according the AS 4964-2004. May include (but not limited to) Actinolite, Anthophyllite or Tremolite asbestos.
WA DOH	Reference document for the NEPM. Government of Western Australia, *Guidelines for the Assessment, Remediation and Management of Asbestos- Contaminated Sites in Western Australia* (updated 2021), including Appendix Four: *Laboratory analysis*
Weighted Average	Combined average % w/w asbestos content of all asbestos-containing finds in the given aliquot or total soil sample (**$\%_{WA}$**).

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

Asbestos Counter/Identifier:

Sayeed Abu	Senior Analyst-Asbestos (NSW)

Authorised by:

Chamath JHM Annakkage	Senior Analyst-Asbestos (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **855638-S**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Jan 17, 2022

Client Sample ID			**TRIP SPIKE**	**TRIP BLANK**	**BH10_0.1-0.2**	**DUP4**
Sample Matrix			**Soil**	**Soil**	**Soil**	**Soil**
Eurofins Sample No.			**W22-Ja12144**	**W22-Ja12145**	**W22-Ja12147**	**W22-Ja12148**
Date Sampled			**Jan 14, 2022**	**Jan 14, 2022**	**Jan 14, 2022**	**Jan 14, 2022**
Test/Reference	LOR	Unit				
TRH C6-C10	1	%	91	-	-	-
Naphthalene[N02]	0.5	mg/kg	-	< 0.5	-	-
% Moisture	1	%	-	-	16	17
Total Recoverable Hydrocarbons						
Naphthalene	1	%	84	-	-	-
TRH C6-C9	1	%	92	-	-	-
TRH C6-C10	20	mg/kg	-	< 20	-	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	< 20	-	-
BTEX						
Benzene	1	%	95	-	-	-
Ethylbenzene	1	%	90	-	-	-
m&p-Xylenes	1	%	89	-	-	-
o-Xylene	1	%	90	-	-	-
Toluene	1	%	92	-	-	-
Xylenes - Total	1	%	90	-	-	-
4-Bromofluorobenzene (surr.)	1	%	98	-	-	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	20	mg/kg	-	< 20	< 20	< 20
TRH C10-C14	20	mg/kg	-	-	71	31
TRH C15-C28	50	mg/kg	-	-	170	100
TRH C29-C36	50	mg/kg	-	-	110	93
TRH C10-C36 (Total)	50	mg/kg	-	-	351	224
BTEX						
Benzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Toluene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Ethylbenzene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
m&p-Xylenes	0.2	mg/kg	-	< 0.2	< 0.2	< 0.2
o-Xylene	0.1	mg/kg	-	< 0.1	< 0.1	< 0.1
Xylenes - Total*	0.3	mg/kg	-	< 0.3	< 0.3	< 0.3
4-Bromofluorobenzene (surr.)	1	%	-	106	110	83
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
Naphthalene[N02]	0.5	mg/kg	-	-	< 0.5	< 0.5
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	-	-	66	< 50
TRH C6-C10	20	mg/kg	-	-	< 20	< 20
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	-	-	< 20	< 20

Client Sample ID			TRIP SPIKE	TRIP BLANK	BH10_0.1-0.2	DUP4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W22-Ja12144	W22-Ja12145	W22-Ja12147	W22-Ja12148
Date Sampled			Jan 14, 2022	Jan 14, 2022	Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	-	-	0.6	0.6
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	-	-	1.2	1.2
Acenaphthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Acenaphthylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benz(a)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(a)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(g.h.i)perylene	0.5	mg/kg	-	-	< 0.5	< 0.5
Benzo(k)fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Chrysene	0.5	mg/kg	-	-	< 0.5	< 0.5
Dibenz(a.h)anthracene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluoranthene	0.5	mg/kg	-	-	< 0.5	< 0.5
Fluorene	0.5	mg/kg	-	-	< 0.5	< 0.5
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Naphthalene	0.5	mg/kg	-	-	< 0.5	< 0.5
Phenanthrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Pyrene	0.5	mg/kg	-	-	< 0.5	< 0.5
Total PAH*	0.5	mg/kg	-	-	< 0.5	< 0.5
2-Fluorobiphenyl (surr.)	1	%	-	-	114	102
p-Terphenyl-d14 (surr.)	1	%	-	-	109	125
Organochlorine Pesticides						
Chlordanes - Total	0.1	mg/kg	-	-	< 0.1	< 0.1
4.4'-DDD	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDE	0.05	mg/kg	-	-	< 0.05	< 0.05
4.4'-DDT	0.05	mg/kg	-	-	< 0.05	< 0.05
a-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
Aldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
b-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
d-HCH	0.05	mg/kg	-	-	< 0.05	< 0.05
Dieldrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan I	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan II	0.05	mg/kg	-	-	< 0.05	< 0.05
Endosulfan sulphate	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin aldehyde	0.05	mg/kg	-	-	< 0.05	< 0.05
Endrin ketone	0.05	mg/kg	-	-	< 0.05	< 0.05
g-HCH (Lindane)	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Heptachlor epoxide	0.05	mg/kg	-	-	< 0.05	< 0.05
Hexachlorobenzene	0.05	mg/kg	-	-	< 0.05	< 0.05
Methoxychlor	0.05	mg/kg	-	-	< 0.05	< 0.05
Toxaphene	0.5	mg/kg	-	-	< 0.5	< 0.5
Aldrin and Dieldrin (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
DDT + DDE + DDD (Total)*	0.05	mg/kg	-	-	< 0.05	< 0.05
Vic EPA IWRG 621 OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Vic EPA IWRG 621 Other OCP (Total)*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	104	133
Tetrachloro-m-xylene (surr.)	1	%	-	-	100	101

Client Sample ID			TRIP SPIKE	TRIP BLANK	BH10_0.1-0.2	DUP4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W22-Ja12144	W22-Ja12145	W22-Ja12147	W22-Ja12148
Date Sampled			Jan 14, 2022	Jan 14, 2022	Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit				
Organophosphorus Pesticides						
Azinphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Bolstar	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorfenvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos	0.2	mg/kg	-	-	< 0.2	< 0.2
Chlorpyrifos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Coumaphos	2	mg/kg	-	-	< 2	< 2
Demeton-S	0.2	mg/kg	-	-	< 0.2	< 0.2
Demeton-O	0.2	mg/kg	-	-	< 0.2	< 0.2
Diazinon	0.2	mg/kg	-	-	< 0.2	< 0.2
Dichlorvos	0.2	mg/kg	-	-	< 0.2	< 0.2
Dimethoate	0.2	mg/kg	-	-	< 0.2	< 0.2
Disulfoton	0.2	mg/kg	-	-	< 0.2	< 0.2
EPN	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethion	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethoprop	0.2	mg/kg	-	-	< 0.2	< 0.2
Ethyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenitrothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fensulfothion	0.2	mg/kg	-	-	< 0.2	< 0.2
Fenthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Malathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Merphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Methyl parathion	0.2	mg/kg	-	-	< 0.2	< 0.2
Mevinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Monocrotophos	2	mg/kg	-	-	< 2	< 2
Naled	0.2	mg/kg	-	-	< 0.2	< 0.2
Omethoate	2	mg/kg	-	-	< 2	< 2
Phorate	0.2	mg/kg	-	-	< 0.2	< 0.2
Pirimiphos-methyl	0.2	mg/kg	-	-	< 0.2	< 0.2
Pyrazophos	0.2	mg/kg	-	-	< 0.2	< 0.2
Ronnel	0.2	mg/kg	-	-	< 0.2	< 0.2
Terbufos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tetrachlorvinphos	0.2	mg/kg	-	-	< 0.2	< 0.2
Tokuthion	0.2	mg/kg	-	-	< 0.2	< 0.2
Trichloronate	0.2	mg/kg	-	-	< 0.2	< 0.2
Triphenylphosphate (surr.)	1	%	-	-	83	132
Polychlorinated Biphenyls						
Aroclor-1016	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1221	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1232	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1242	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1248	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1254	0.1	mg/kg	-	-	< 0.1	< 0.1
Aroclor-1260	0.1	mg/kg	-	-	< 0.1	< 0.1
Total PCB*	0.1	mg/kg	-	-	< 0.1	< 0.1
Dibutylchlorendate (surr.)	1	%	-	-	104	133
Tetrachloro-m-xylene (surr.)	1	%	-	-	100	101

Client Sample ID			TRIP SPIKE	TRIP BLANK	BH10_0.1-0.2	DUP4
Sample Matrix			Soil	Soil	Soil	Soil
Eurofins Sample No.			W22-Ja12144	W22-Ja12145	W22-Ja12147	W22-Ja12148
Date Sampled			Jan 14, 2022	Jan 14, 2022	Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	50	mg/kg	-	-	66	< 50
TRH >C16-C34	100	mg/kg	-	-	230	160
TRH >C34-C40	100	mg/kg	-	-	< 100	< 100
TRH >C10-C40 (total)*	100	mg/kg	-	-	296	160
Metals M8						
Arsenic	2	mg/kg	-	-	< 2	2.4
Cadmium	0.4	mg/kg	-	-	< 0.4	< 0.4
Chromium	5	mg/kg	-	-	6.0	7.2
Copper	5	mg/kg	-	-	13	19
Lead	5	mg/kg	-	-	19	24
Mercury	0.1	mg/kg	-	-	< 0.1	< 0.1
Nickel	5	mg/kg	-	-	< 5	< 5
Zinc	5	mg/kg	-	-	40	72

Client Sample ID			BH10_0.9-1.0	BH10_1.5-1.95
Sample Matrix			Soil	Soil
Eurofins Sample No.			W22-Ja12151	W22-Ja12152
Date Sampled			Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit		
% Moisture	1	%	13	-
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				
TRH C6-C9	20	mg/kg	< 20	-
TRH C10-C14	20	mg/kg	< 20	-
TRH C15-C28	50	mg/kg	< 50	-
TRH C29-C36	50	mg/kg	< 50	-
TRH C10-C36 (Total)	50	mg/kg	< 50	-
BTEX				
Benzene	0.1	mg/kg	< 0.1	-
Toluene	0.1	mg/kg	< 0.1	-
Ethylbenzene	0.1	mg/kg	< 0.1	-
m&p-Xylenes	0.2	mg/kg	< 0.2	-
o-Xylene	0.1	mg/kg	< 0.1	-
Xylenes - Total*	0.3	mg/kg	< 0.3	-
4-Bromofluorobenzene (surr.)	1	%	138	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
Naphthalene[N02]	0.5	mg/kg	< 0.5	-
TRH >C10-C16 less Naphthalene (F2)[N01]	50	mg/kg	< 50	-
TRH C6-C10	20	mg/kg	< 20	-
TRH C6-C10 less BTEX (F1)[N04]	20	mg/kg	< 20	-
Polycyclic Aromatic Hydrocarbons				
Benzo(a)pyrene TEQ (lower bound) *	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene TEQ (medium bound) *	0.5	mg/kg	0.6	-
Benzo(a)pyrene TEQ (upper bound) *	0.5	mg/kg	1.2	-
Acenaphthene	0.5	mg/kg	< 0.5	-
Acenaphthylene	0.5	mg/kg	< 0.5	-
Anthracene	0.5	mg/kg	< 0.5	-

Client Sample ID			BH10_0.9-1.0	BH10_1.5-1.95
Sample Matrix			Soil	Soil
Eurofins Sample No.			W22-Ja12151	W22-Ja12152
Date Sampled			Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit		
Polycyclic Aromatic Hydrocarbons				
Benz(a)anthracene	0.5	mg/kg	< 0.5	-
Benzo(a)pyrene	0.5	mg/kg	< 0.5	-
Benzo(b&j)fluoranthene[N07]	0.5	mg/kg	< 0.5	-
Benzo(g.h.i)perylene	0.5	mg/kg	< 0.5	-
Benzo(k)fluoranthene	0.5	mg/kg	< 0.5	-
Chrysene	0.5	mg/kg	< 0.5	-
Dibenz(a.h)anthracene	0.5	mg/kg	< 0.5	-
Fluoranthene	0.5	mg/kg	< 0.5	-
Fluorene	0.5	mg/kg	< 0.5	-
Indeno(1.2.3-cd)pyrene	0.5	mg/kg	< 0.5	-
Naphthalene	0.5	mg/kg	< 0.5	-
Phenanthrene	0.5	mg/kg	< 0.5	-
Pyrene	0.5	mg/kg	< 0.5	-
Total PAH*	0.5	mg/kg	< 0.5	-
2-Fluorobiphenyl (surr.)	1	%	109	-
p-Terphenyl-d14 (surr.)	1	%	125	-
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				
TRH >C10-C16	50	mg/kg	< 50	-
TRH >C16-C34	100	mg/kg	< 100	-
TRH >C34-C40	100	mg/kg	< 100	-
TRH >C10-C40 (total)*	100	mg/kg	< 100	-
Metals M8				
Arsenic	2	mg/kg	4.9	-
Cadmium	0.4	mg/kg	< 0.4	-
Chromium	5	mg/kg	21	-
Copper	5	mg/kg	14	-
Lead	5	mg/kg	10	-
Mercury	0.1	mg/kg	< 0.1	-
Nickel	5	mg/kg	5.2	-
Zinc	5	mg/kg	16	-
Actual Acidity (NLM-3.2)				
pH-KCL (NLM-3.1)	0.1	pH Units	-	4.3
Titratable Actual Acidity (NLM-3.2)	2	mol H+/t	-	61
Titratable Actual Acidity (NLM-3.2)	0.003	% pyrite S	-	0.10
SPOCAS Suite				
pH-OX	0.1	pH Units	-	4.3
Titratable Peroxide Acidity (a-TPA)	2	mol H+/t	-	73
Titratable Sulfidic Acidity (a-TSA)	2	mol H+/t	-	13
Titratable Peroxide Acidity (s-TPA)	0.02	% pyrite S	-	0.12
Titratable Sulfidic Acidity (s-TSA)	0.02	% pyrite S	-	0.02
Sulfur - KCl Extractable	0.005	% S	-	0.050
Peroxide Extractable Sulfur	0.005	% S	-	0.060
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	0.02	% S	-	< 0.02
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	10	mol H+/t	-	< 10
HCl Extractable Sulfur Correction Factor	1	factor	-	2.0
HCl Extractable Sulfur	0.005	% S	-	0.070
Net Acid soluble sulfur (a-SNAS) NLM-4.1	10	mol H+/t	-	14
Net Acid soluble sulfur (s-SNAS) NLM-4.1[S02]	0.02	% S	-	0.02
Calcium - KCl Extractable	0.005	% Ca	-	0.030

Client Sample ID			BH10_0.9-1.0	BH10_1.5-1.95
Sample Matrix			Soil	Soil
Eurofins Sample No.			W22-Ja12151	W22-Ja12152
Date Sampled			Jan 14, 2022	Jan 14, 2022
Test/Reference	LOR	Unit		
SPOCAS Suite				
Calcium - Peroxide	0.005	% Ca	-	0.030
Calcium - Acid Reacted	0.005	% Ca	-	< 0.005
Calcium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	< 0.005
Calcium - Acid Reacted (s-aCa)	0.005	% S	-	< 0.005
Magnesium - KCl Extractable	0.005	% Mg	-	0.090
Magnesium - Peroxide	0.005	% Mg	-	0.090
Magnesium - Acid Reacted	0.005	% Mg	-	< 0.005
Magnesium - Acid Reacted (a-aCa)	0.005	mol H+/t	-	< 0.005
Magnesium - Acid Reacted (s-aCa)	0.005	% S	-	< 0.005
Acid Neutralising Capacity - (ANCE)	0.02	% CaCO3	-	N/A
Acid Neutralising Capacity - (a-ANCE)	10	mol H+/t	-	n/a
Acid Neutralising Capacity - (s-ANCE)	0.02	% S	-	N/A
ANC Fineness Factor		factor	-	1.5
Net Acidity (Including ANC)				
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	10	mol H+/t	-	79
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	0.02	% S	-	0.13
SPOCAS - Liming rate - ASSMAC	1	kg CaCO3/t	-	6.0
Extraneous Material				
<2mm Fraction	0.005	g	-	160
>2mm Fraction	0.005	g	-	< 0.005
Analysed Material	0.1	%	-	100
Extraneous Material	0.1	%	-	< 0.1

Sample History

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

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	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 1999 NEPM Fractions	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
% Moisture	Sydney	Jan 19, 2022	14 Days
- Method: LTM-GEN-7080 Moisture			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Jan 25, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jan 25, 2022	14 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jan 25, 2022	28 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
SPOCAS Suite			
SPOCAS Suite	Brisbane	Jan 24, 2022	6 Week
- Method: LTM-GEN-7050			
Extraneous Material	Brisbane	Jan 24, 2022	6 Week
- Method: LTM-GEN-7050/7070			

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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
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Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	RB3	Jan 14, 2022		Water	W22-Ja12143			X			X		
2	TRIP SPIKE	Jan 14, 2022		Soil	W22-Ja12144								X
3	TRIP BLANK	Jan 14, 2022		Soil	W22-Ja12145							X	
4	BH10_0-0.1	Jan 14, 2022		Soil	W22-Ja12146		X						
5	BH10_0.1-0.2	Jan 14, 2022		Soil	W22-Ja12147	X		X		X	X		
6	DUP4	Jan 14, 2022		Soil	W22-Ja12148			X		X	X		
7	BH10_0.4-0.5	Jan 14, 2022		Soil	W22-Ja12150		X						
8	BH10_0.9-1.0	Jan 14, 2022		Soil	W22-Ja12151					X	X		
9	BH10_1.5-1.95	Jan 14, 2022		Soil	W22-Ja12152				X				

Date Reported:Jan 28, 2022

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Project Name: ST GEORGE
Project ID: SYDGE295047

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Received: Jan 17, 2022 5:37 PM
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Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
10	BH10_3.0-3.45	Jan 14, 2022		Soil	W22-Ja12153		X						
11	BH10_4.5-4.95	Jan 14, 2022		Soil	W22-Ja12154		X						
Test Counts						1	4	3	1	3	4	1	1

Date Reported:Jan 28, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Total Recoverable Hydrocarbons							
TRH C6-C10	mg/kg	< 20			20	Pass	
Method Blank							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	mg/kg	< 20			20	Pass	
TRH C10-C14	mg/kg	< 20			20	Pass	
TRH C15-C28	mg/kg	< 50			50	Pass	
TRH C29-C36	mg/kg	< 50			50	Pass	
Method Blank							
BTEX							
Benzene	mg/kg	< 0.1			0.1	Pass	
Toluene	mg/kg	< 0.1			0.1	Pass	
Ethylbenzene	mg/kg	< 0.1			0.1	Pass	
m&p-Xylenes	mg/kg	< 0.2			0.2	Pass	
o-Xylene	mg/kg	< 0.1			0.1	Pass	
Xylenes - Total*	mg/kg	< 0.3			0.3	Pass	
Method Blank							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	mg/kg	< 0.5			0.5	Pass	
Acenaphthylene	mg/kg	< 0.5			0.5	Pass	
Anthracene	mg/kg	< 0.5			0.5	Pass	
Benz(a)anthracene	mg/kg	< 0.5			0.5	Pass	
Benzo(a)pyrene	mg/kg	< 0.5			0.5	Pass	
Benzo(b&j)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Benzo(g.h.i)perylene	mg/kg	< 0.5			0.5	Pass	
Benzo(k)fluoranthene	mg/kg	< 0.5			0.5	Pass	
Chrysene	mg/kg	< 0.5			0.5	Pass	
Dibenz(a.h)anthracene	mg/kg	< 0.5			0.5	Pass	
Fluoranthene	mg/kg	< 0.5			0.5	Pass	
Fluorene	mg/kg	< 0.5			0.5	Pass	
Indeno(1.2.3-cd)pyrene	mg/kg	< 0.5			0.5	Pass	
Naphthalene	mg/kg	< 0.5			0.5	Pass	
Phenanthrene	mg/kg	< 0.5			0.5	Pass	
Pyrene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organochlorine Pesticides							
Chlordanes - Total	mg/kg	< 0.1			0.1	Pass	
4.4'-DDD	mg/kg	< 0.05			0.05	Pass	
4.4'-DDE	mg/kg	< 0.05			0.05	Pass	
4.4'-DDT	mg/kg	< 0.05			0.05	Pass	
a-HCH	mg/kg	< 0.05			0.05	Pass	
Aldrin	mg/kg	< 0.05			0.05	Pass	
b-HCH	mg/kg	< 0.05			0.05	Pass	
d-HCH	mg/kg	< 0.05			0.05	Pass	
Dieldrin	mg/kg	< 0.05			0.05	Pass	
Endosulfan I	mg/kg	< 0.05			0.05	Pass	
Endosulfan II	mg/kg	< 0.05			0.05	Pass	
Endosulfan sulphate	mg/kg	< 0.05			0.05	Pass	
Endrin	mg/kg	< 0.05			0.05	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin aldehyde	mg/kg	< 0.05			0.05	Pass	
Endrin ketone	mg/kg	< 0.05			0.05	Pass	
g-HCH (Lindane)	mg/kg	< 0.05			0.05	Pass	
Heptachlor	mg/kg	< 0.05			0.05	Pass	
Heptachlor epoxide	mg/kg	< 0.05			0.05	Pass	
Hexachlorobenzene	mg/kg	< 0.05			0.05	Pass	
Methoxychlor	mg/kg	< 0.05			0.05	Pass	
Toxaphene	mg/kg	< 0.5			0.5	Pass	
Method Blank							
Organophosphorus Pesticides							
Azinphos-methyl	mg/kg	< 0.2			0.2	Pass	
Bolstar	mg/kg	< 0.2			0.2	Pass	
Chlorfenvinphos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos	mg/kg	< 0.2			0.2	Pass	
Chlorpyrifos-methyl	mg/kg	< 0.2			0.2	Pass	
Coumaphos	mg/kg	< 2			2	Pass	
Demeton-S	mg/kg	< 0.2			0.2	Pass	
Demeton-O	mg/kg	< 0.2			0.2	Pass	
Diazinon	mg/kg	< 0.2			0.2	Pass	
Dichlorvos	mg/kg	< 0.2			0.2	Pass	
Dimethoate	mg/kg	< 0.2			0.2	Pass	
Disulfoton	mg/kg	< 0.2			0.2	Pass	
EPN	mg/kg	< 0.2			0.2	Pass	
Ethion	mg/kg	< 0.2			0.2	Pass	
Ethoprop	mg/kg	< 0.2			0.2	Pass	
Ethyl parathion	mg/kg	< 0.2			0.2	Pass	
Fenitrothion	mg/kg	< 0.2			0.2	Pass	
Fensulfothion	mg/kg	< 0.2			0.2	Pass	
Fenthion	mg/kg	< 0.2			0.2	Pass	
Malathion	mg/kg	< 0.2			0.2	Pass	
Merphos	mg/kg	< 0.2			0.2	Pass	
Methyl parathion	mg/kg	< 0.2			0.2	Pass	
Mevinphos	mg/kg	< 0.2			0.2	Pass	
Monocrotophos	mg/kg	< 2			2	Pass	
Naled	mg/kg	< 0.2			0.2	Pass	
Omethoate	mg/kg	< 2			2	Pass	
Phorate	mg/kg	< 0.2			0.2	Pass	
Pirimiphos-methyl	mg/kg	< 0.2			0.2	Pass	
Pyrazophos	mg/kg	< 0.2			0.2	Pass	
Ronnel	mg/kg	< 0.2			0.2	Pass	
Terbufos	mg/kg	< 0.2			0.2	Pass	
Tetrachlorvinphos	mg/kg	< 0.2			0.2	Pass	
Tokuthion	mg/kg	< 0.2			0.2	Pass	
Trichloronate	mg/kg	< 0.2			0.2	Pass	
Method Blank							
Polychlorinated Biphenyls							
Aroclor-1016	mg/kg	< 0.1			0.1	Pass	
Aroclor-1221	mg/kg	< 0.1			0.1	Pass	
Aroclor-1232	mg/kg	< 0.1			0.1	Pass	
Aroclor-1242	mg/kg	< 0.1			0.1	Pass	
Aroclor-1248	mg/kg	< 0.1			0.1	Pass	
Aroclor-1254	mg/kg	< 0.1			0.1	Pass	
Aroclor-1260	mg/kg	< 0.1			0.1	Pass	
Total PCB*	mg/kg	< 0.1			0.1	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Method Blank							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	mg/kg	< 50			50	Pass	
TRH >C16-C34	mg/kg	< 100			100	Pass	
TRH >C34-C40	mg/kg	< 100			100	Pass	
Method Blank							
Metals M8							
Arsenic	mg/kg	< 2			2	Pass	
Cadmium	mg/kg	< 0.4			0.4	Pass	
Chromium	mg/kg	< 5			5	Pass	
Copper	mg/kg	< 5			5	Pass	
Lead	mg/kg	< 5			5	Pass	
Mercury	mg/kg	< 0.1			0.1	Pass	
Nickel	mg/kg	< 5			5	Pass	
Zinc	mg/kg	< 5			5	Pass	
LCS - % Recovery							
Naphthalene	%	96			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons							
TRH C6-C10	%	72			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	75			70-130	Pass	
TRH C10-C14	%	88			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	91			70-130	Pass	
Toluene	%	85			70-130	Pass	
Ethylbenzene	%	89			70-130	Pass	
m&p-Xylenes	%	88			70-130	Pass	
o-Xylene	%	92			70-130	Pass	
Xylenes - Total*	%	90			70-130	Pass	
LCS - % Recovery							
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	104			70-130	Pass	
Acenaphthylene	%	112			70-130	Pass	
Anthracene	%	115			70-130	Pass	
Benz(a)anthracene	%	116			70-130	Pass	
Benzo(a)pyrene	%	110			70-130	Pass	
Benzo(b&j)fluoranthene	%	105			70-130	Pass	
Benzo(g.h.i)perylene	%	105			70-130	Pass	
Benzo(k)fluoranthene	%	104			70-130	Pass	
Chrysene	%	103			70-130	Pass	
Dibenz(a.h)anthracene	%	108			70-130	Pass	
Fluoranthene	%	109			70-130	Pass	
Fluorene	%	115			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	104			70-130	Pass	
Naphthalene	%	106			70-130	Pass	
Phenanthrene	%	109			70-130	Pass	
Pyrene	%	109			70-130	Pass	
LCS - % Recovery							
Organochlorine Pesticides							
Chlordanes - Total	%	111			70-130	Pass	
4.4'-DDD	%	100			70-130	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
4.4'-DDE	%	103			70-130	Pass	
4.4'-DDT	%	87			70-130	Pass	
a-HCH	%	99			70-130	Pass	
Aldrin	%	100			70-130	Pass	
b-HCH	%	108			70-130	Pass	
d-HCH	%	105			70-130	Pass	
Dieldrin	%	114			70-130	Pass	
Endosulfan I	%	105			70-130	Pass	
Endosulfan II	%	102			70-130	Pass	
Endosulfan sulphate	%	71			70-130	Pass	
Endrin	%	111			70-130	Pass	
Endrin aldehyde	%	121			70-130	Pass	
Endrin ketone	%	84			70-130	Pass	
g-HCH (Lindane)	%	111			70-130	Pass	
Heptachlor	%	85			70-130	Pass	
Heptachlor epoxide	%	111			70-130	Pass	
Hexachlorobenzene	%	107			70-130	Pass	
Methoxychlor	%	125			70-130	Pass	
LCS - % Recovery							
Organophosphorus Pesticides							
Diazinon	%	73			70-130	Pass	
Dimethoate	%	82			70-130	Pass	
Ethion	%	121			70-130	Pass	
Fenitrothion	%	111			70-130	Pass	
Methyl parathion	%	88			70-130	Pass	
Mevinphos	%	96			70-130	Pass	
LCS - % Recovery							
Polychlorinated Biphenyls							
Aroclor-1016	%	91			70-130	Pass	
Aroclor-1260	%	88			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	84			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	82			80-120	Pass	
Cadmium	%	99			80-120	Pass	
Chromium	%	87			80-120	Pass	
Copper	%	89			80-120	Pass	
Lead	%	94			80-120	Pass	
Mercury	%	107			80-120	Pass	
Nickel	%	87			80-120	Pass	
Zinc	%	84			80-120	Pass	
LCS - % Recovery							
Actual Acidity (NLM-3.2)							
pH-KCL (NLM-3.1)	%	101			80-120	Pass	
Titratable Actual Acidity (NLM-3.2)	%	87			80-120	Pass	
LCS - % Recovery							
SPOCAS Suite							
HCl Extractable Sulfur	%	112			80-120	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Spike - % Recovery									
				Result 1					
Naphthalene	S22-Ja22491	NCP	%	95			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons				Result 1					
TRH C6-C10	S22-Ja22491	NCP	%	80			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C6-C9	S22-Ja22491	NCP	%	83			70-130	Pass	
Spike - % Recovery									
BTEX				Result 1					
Benzene	S22-Ja22491	NCP	%	90			70-130	Pass	
Toluene	S22-Ja22491	NCP	%	86			70-130	Pass	
Ethylbenzene	S22-Ja22491	NCP	%	89			70-130	Pass	
m&p-Xylenes	S22-Ja22491	NCP	%	89			70-130	Pass	
o-Xylene	S22-Ja22491	NCP	%	91			70-130	Pass	
Xylenes - Total*	S22-Ja22491	NCP	%	90			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1					
TRH C10-C14	S22-Ja19585	NCP	%	93			70-130	Pass	
Spike - % Recovery									
Polycyclic Aromatic Hydrocarbons				Result 1					
Acenaphthene	S22-Ja22960	NCP	%	97			70-130	Pass	
Acenaphthylene	S22-Ja22960	NCP	%	102			70-130	Pass	
Anthracene	S22-Ja22960	NCP	%	103			70-130	Pass	
Benz(a)anthracene	S22-Ja22960	NCP	%	95			70-130	Pass	
Benzo(a)pyrene	S22-Ja22960	NCP	%	102			70-130	Pass	
Benzo(b&j)fluoranthene	S22-Ja22960	NCP	%	106			70-130	Pass	
Benzo(g.h.i)perylene	S22-Ja22960	NCP	%	92			70-130	Pass	
Benzo(k)fluoranthene	S22-Ja22960	NCP	%	89			70-130	Pass	
Chrysene	S22-Ja22960	NCP	%	93			70-130	Pass	
Dibenz(a.h)anthracene	S22-Ja22960	NCP	%	97			70-130	Pass	
Fluoranthene	S22-Ja22960	NCP	%	98			70-130	Pass	
Fluorene	S22-Ja22960	NCP	%	106			70-130	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja22960	NCP	%	93			70-130	Pass	
Naphthalene	S22-Ja22960	NCP	%	96			70-130	Pass	
Phenanthrene	S22-Ja22960	NCP	%	99			70-130	Pass	
Pyrene	S22-Ja22960	NCP	%	96			70-130	Pass	
Spike - % Recovery									
Organochlorine Pesticides				Result 1					
Chlordanes - Total	S22-Ja22960	NCP	%	106			70-130	Pass	
4.4'-DDD	S22-Ja22960	NCP	%	99			70-130	Pass	
4.4'-DDE	S22-Ja22960	NCP	%	98			70-130	Pass	
4.4'-DDT	S22-Ja22960	NCP	%	85			70-130	Pass	
a-HCH	S22-Ja22960	NCP	%	96			70-130	Pass	
Aldrin	S22-Ja22960	NCP	%	93			70-130	Pass	
b-HCH	S22-Ja22960	NCP	%	103			70-130	Pass	
d-HCH	S22-Ja22960	NCP	%	101			70-130	Pass	
Dieldrin	S22-Ja22960	NCP	%	104			70-130	Pass	
Endosulfan I	S22-Ja22960	NCP	%	102			70-130	Pass	
Endosulfan II	S22-Ja22960	NCP	%	98			70-130	Pass	
Endosulfan sulphate	S22-Ja24181	NCP	%	70			70-130	Pass	
Endrin	S22-Ja22960	NCP	%	106			70-130	Pass	
Endrin aldehyde	S22-Ja24181	NCP	%	85			70-130	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Endrin ketone	S22-Ja22960	NCP	%	80			70-130	Pass	
g-HCH (Lindane)	S22-Ja22960	NCP	%	104			70-130	Pass	
Heptachlor	S22-Ja22960	NCP	%	81			70-130	Pass	
Heptachlor epoxide	S22-Ja22960	NCP	%	107			70-130	Pass	
Hexachlorobenzene	S22-Ja22960	NCP	%	100			70-130	Pass	
Methoxychlor	S22-Ja19855	NCP	%	128			70-130	Pass	
Spike - % Recovery									
Organophosphorus Pesticides				Result 1					
Dimethoate	S22-Ja24181	NCP	%	83			70-130	Pass	
Mevinphos	S22-Ja24181	NCP	%	99			70-130	Pass	
Spike - % Recovery									
Polychlorinated Biphenyls				Result 1					
Aroclor-1016	S22-Ja24181	NCP	%	86			70-130	Pass	
Aroclor-1260	S22-Ja24181	NCP	%	89			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S22-Ja19585	NCP	%	84			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S22-Ja22506	NCP	%	84			75-125	Pass	
Cadmium	S22-Ja22506	NCP	%	83			75-125	Pass	
Chromium	S22-Ja22506	NCP	%	88			75-125	Pass	
Copper	S22-Ja22506	NCP	%	88			75-125	Pass	
Lead	S22-Ja22506	NCP	%	95			75-125	Pass	
Mercury	S22-Ja22506	NCP	%	88			75-125	Pass	
Nickel	S22-Ja22506	NCP	%	85			75-125	Pass	
Zinc	S22-Ja22506	NCP	%	94			75-125	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
				Result 1	Result 2	RPD			
Naphthalene	S22-Ja22489	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons				Result 1	Result 2	RPD			
TRH C6-C10	S22-Ja22489	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ja22489	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja22489	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Toluene	S22-Ja22489	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Ethylbenzene	S22-Ja22489	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
m&p-Xylenes	S22-Ja22489	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
o-Xylene	S22-Ja22489	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Xylenes - Total*	S22-Ja22489	NCP	mg/kg	< 0.3	< 0.3	<1	30%	Pass	
Duplicate									
				Result 1	Result 2	RPD			
% Moisture	N22-Ja16158	NCP	%	20	21	6.0	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	S22-Ja22071	NCP	mg/kg	< 20	< 20	<1	30%	Pass	
TRH C15-C28	S22-Ja22071	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH C29-C36	S22-Ja22071	NCP	mg/kg	< 50	< 50	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Acenaphthylene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Anthracene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benz(a)anthracene	S22-Ja19995	NCP	mg/kg	< 0.5	0.8	64	30%	Fail	Q15
Benzo(a)pyrene	S22-Ja19995	NCP	mg/kg	< 0.5	0.8	71	30%	Fail	Q15
Benzo(b&j)fluoranthene	S22-Ja19995	NCP	mg/kg	< 0.5	0.6	72	30%	Fail	Q15
Benzo(g.h.i)perylene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ja19995	NCP	mg/kg	< 0.5	0.8	68	30%	Fail	Q15
Chrysene	S22-Ja19995	NCP	mg/kg	< 0.5	0.8	65	30%	Fail	Q15
Dibenz(a.h)anthracene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Fluoranthene	S22-Ja19995	NCP	mg/kg	0.8	1.3	47	30%	Fail	Q15
Fluorene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Naphthalene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Phenanthrene	S22-Ja19995	NCP	mg/kg	0.7	0.5	33	30%	Fail	Q15
Pyrene	S22-Ja19995	NCP	mg/kg	0.8	1.5	62	30%	Fail	Q15
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
4.4'-DDD	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDE	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
4.4'-DDT	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
a-HCH	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Aldrin	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
b-HCH	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
d-HCH	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Dieldrin	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan I	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan II	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endosulfan sulphate	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin aldehyde	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Endrin ketone	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
g-HCH (Lindane)	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Heptachlor epoxide	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Hexachlorobenzene	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Methoxychlor	S22-Ja19995	NCP	mg/kg	< 0.05	< 0.05	<1	30%	Pass	
Toxaphene	S22-Ja19995	NCP	mg/kg	< 0.5	< 0.5	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Bolstar	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorfenvinphos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Coumaphos	S22-Ja19995	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Demeton-S	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Demeton-O	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Diazinon	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dichlorvos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Dimethoate	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Disulfoton	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
EPN	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethoprop	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ethyl parathion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenitrothion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fensulfothion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Fenthion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Malathion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Merphos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Methyl parathion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Mevinphos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Monocrotophos	S22-Ja19995	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Naled	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Omethoate	S22-Ja19995	NCP	mg/kg	< 2	< 2	<1	30%	Pass	
Phorate	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pirimiphos-methyl	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Pyrazophos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Ronnel	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Terbufos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tetrachlorvinphos	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Tokuthion	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Trichloronate	S22-Ja19995	NCP	mg/kg	< 0.2	< 0.2	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1221	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1232	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1242	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1248	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1254	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Aroclor-1260	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Total PCB*	S22-Ja19995	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S22-Ja22071	NCP	mg/kg	< 50	< 50	<1	30%	Pass	
TRH >C16-C34	S22-Ja22071	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
TRH >C34-C40	S22-Ja22071	NCP	mg/kg	< 100	< 100	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S22-Ja22505	NCP	mg/kg	4.5	3.4	28	30%	Pass	
Cadmium	S22-Ja22505	NCP	mg/kg	< 0.4	< 0.4	<1	30%	Pass	
Chromium	S22-Ja22505	NCP	mg/kg	13	12	11	30%	Pass	
Copper	S22-Ja22505	NCP	mg/kg	18	21	17	30%	Pass	
Lead	S22-Ja22505	NCP	mg/kg	19	23	19	30%	Pass	
Mercury	S22-Ja22505	NCP	mg/kg	< 0.1	< 0.1	<1	30%	Pass	
Nickel	S22-Ja22505	NCP	mg/kg	5.4	6.8	22	30%	Pass	
Zinc	S22-Ja22505	NCP	mg/kg	28	35	22	30%	Pass	
Duplicate									
Actual Acidity (NLM-3.2)				Result 1	Result 2	RPD			
pH-KCL (NLM-3.1)	W22-Ja12152	CP	pH Units	4.3	4.3	<1	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	W22-Ja12152	CP	mol H+/t	61	60	1.0	30%	Pass	
Titratable Actual Acidity (NLM-3.2)	W22-Ja12152	CP	% pyrite S	0.10	0.10	1.0	30%	Pass	

Duplicate									
SPOCAS Suite				Result 1	Result 2	RPD			
pH-OX	W22-Ja12152	CP	pH Units	4.3	4.3	<1	30%	Pass	
Titratable Peroxide Acidity (a-TPA)	W22-Ja12152	CP	mol H+/t	73	74	1.0	30%	Pass	
Titratable Sulfidic Acidity (a-TSA)	W22-Ja12152	CP	mol H+/t	13	14	9.0	30%	Pass	
Titratable Peroxide Acidity (s-TPA)	W22-Ja12152	CP	% pyrite S	0.12	0.12	1.0	30%	Pass	
Titratable Sulfidic Acidity (s-TSA)	W22-Ja12152	CP	% pyrite S	0.02	0.02	9.0	30%	Pass	
Sulfur - KCl Extractable	W22-Ja12152	CP	% S	0.050	0.050	<1	30%	Pass	
Peroxide Extractable Sulfur	W22-Ja12152	CP	% S	0.060	0.060	2.0	30%	Pass	
Peroxide Oxidisable Sulfur (s-SPOS) (NLM 2.2)	W22-Ja12152	CP	% S	< 0.02	< 0.02	<1	30%	Pass	
Peroxide Oxidisable Sulfur (a-SPOS) (NLM 2.2)	W22-Ja12152	CP	mol H+/t	< 10	< 10	<1	30%	Pass	
HCl Extractable Sulfur	W22-Ja12152	CP	% S	0.070	0.070	1.0	30%	Pass	
Net Acid soluble sulfur (a-SNAS) NLM-4.1	W22-Ja12152	CP	mol H+/t	14	14	6.0	30%	Pass	
Net Acid soluble sulfur (s-SNAS) NLM-4.1	W22-Ja12152	CP	% S	0.02	0.02	6.0	30%	Pass	
Calcium - KCl Extractable	W22-Ja12152	CP	% Ca	0.030	0.030	8.0	30%	Pass	
Calcium - Peroxide	W22-Ja12152	CP	% Ca	0.030	0.030	4.0	30%	Pass	
Calcium - Acid Reacted	W22-Ja12152	CP	% Ca	< 0.005	< 0.005	<1	30%	Pass	
Calcium - Acid Reacted (a-aCa)	W22-Ja12152	CP	mol H+/t	< 0.005	< 0.005	<1	30%	Pass	
Calcium - Acid Reacted (s-aCa)	W22-Ja12152	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Magnesium - KCl Extractable	W22-Ja12152	CP	% Mg	0.090	0.090	<1	30%	Pass	
Magnesium - Peroxide	W22-Ja12152	CP	% Mg	0.090	0.090	2.0	30%	Pass	
Magnesium - Acid Reacted	W22-Ja12152	CP	% Mg	< 0.005	< 0.005	<1	30%	Pass	
Magnesium - Acid Reacted (a-aCa)	W22-Ja12152	CP	mol H+/t	< 0.005	< 0.005	<1	30%	Pass	
Magnesium - Acid Reacted (s-aCa)	W22-Ja12152	CP	% S	< 0.005	< 0.005	<1	30%	Pass	
Acid Neutralising Capacity - (ANCE)	W22-Ja12152	CP	% CaCO3	N/A	N/A	N/A	30%	Pass	
Acid Neutralising Capacity - (a-ANCE)	W22-Ja12152	CP	mol H+/t	n/a	n/a	N/A	30%	Pass	
ANC Fineness Factor	W22-Ja12152	CP	factor	1.5	1.5	<1	30%	Pass	
Duplicate									
Net Acidity (Including ANC)				Result 1	Result 2	RPD			
SPOCAS - Net Acidity - ASSMAC (Acidity Units)	W22-Ja12152	CP	mol H+/t	79	79	1.0	30%	Pass	
SPOCAS - Net Acidity - ASSMAC (Sulfur Units)	W22-Ja12152	CP	% S	0.13	0.13	1.0	30%	Pass	
SPOCAS - Liming rate - ASSMAC	W22-Ja12152	CP	kg CaCO3/t	6.0	6.0	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
Q08	The matrix spike recovery is outside of the recommended acceptance criteria. An acceptable recovery was obtained for the laboratory control sample indicating a sample matrix interference.
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.
S02	Retained Acidity is Reported when the pHKCl is less than pH 4.5

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Myles Clark	Senior Analyst-SPOCAS (QLD)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Attention: **Matthew Locke**

Report **855638-W**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Jan 17, 2022

Client Sample ID			**RB3**
Sample Matrix			**Water**
Eurofins Sample No.			**W22-Ja12143**
Date Sampled			**Jan 14, 2022**
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05
TRH C15-C28	0.1	mg/L	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	< 0.1
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	%	76
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
Naphthalene[N02]	0.01	mg/L	< 0.01
TRH >C10-C16 less Naphthalene (F2)[N01]	0.05	mg/L	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02
Polycyclic Aromatic Hydrocarbons			
Acenaphthene	0.001	mg/L	< 0.001
Acenaphthylene	0.001	mg/L	< 0.001
Anthracene	0.001	mg/L	< 0.001
Benz(a)anthracene	0.001	mg/L	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001
Chrysene	0.001	mg/L	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001
Fluoranthene	0.001	mg/L	< 0.001
Fluorene	0.001	mg/L	< 0.001
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001
Naphthalene	0.001	mg/L	< 0.001
Phenanthrene	0.001	mg/L	< 0.001
Pyrene	0.001	mg/L	< 0.001

Client Sample ID			RB3
Sample Matrix			Water
Eurofins Sample No.			W22-Ja12143
Date Sampled			Jan 14, 2022
Test/Reference	LOR	Unit	
Polycyclic Aromatic Hydrocarbons			
Total PAH*	0.001	mg/L	< 0.001
2-Fluorobiphenyl (surr.)	1	%	69
p-Terphenyl-d14 (surr.)	1	%	INT
Organochlorine Pesticides			
Chlordanes - Total	0.002	mg/L	< 0.002
4.4'-DDD	0.0002	mg/L	< 0.0002
4.4'-DDE	0.0002	mg/L	< 0.0002
4.4'-DDT	0.0002	mg/L	< 0.0002
a-HCH	0.0002	mg/L	< 0.0002
Aldrin	0.0002	mg/L	< 0.0002
b-HCH	0.0002	mg/L	< 0.0002
d-HCH	0.0002	mg/L	< 0.0002
Dieldrin	0.0002	mg/L	< 0.0002
Endosulfan I	0.0002	mg/L	< 0.0002
Endosulfan II	0.0002	mg/L	< 0.0002
Endosulfan sulphate	0.0002	mg/L	< 0.0002
Endrin	0.0002	mg/L	< 0.0002
Endrin aldehyde	0.0002	mg/L	< 0.0002
Endrin ketone	0.0002	mg/L	< 0.0002
g-HCH (Lindane)	0.0002	mg/L	< 0.0002
Heptachlor	0.0002	mg/L	< 0.0002
Heptachlor epoxide	0.0002	mg/L	< 0.0002
Hexachlorobenzene	0.0002	mg/L	< 0.0002
Methoxychlor	0.0002	mg/L	< 0.0002
Toxaphene	0.005	mg/L	< 0.005
Aldrin and Dieldrin (Total)*	0.0002	mg/L	< 0.0002
DDT + DDE + DDD (Total)*	0.0002	mg/L	< 0.0002
Vic EPA IWRG 621 OCP (Total)*	0.002	mg/L	< 0.002
Vic EPA IWRG 621 Other OCP (Total)*	0.002	mg/L	< 0.002
Dibutylchlorendate (surr.)	1	%	INT
Tetrachloro-m-xylene (surr.)	1	%	141
Organophosphorus Pesticides			
Azinphos-methyl	0.002	mg/L	< 0.002
Bolstar	0.002	mg/L	< 0.002
Chlorfenvinphos	0.02	mg/L	< 0.02
Chlorpyrifos	0.002	mg/L	< 0.002
Chlorpyrifos-methyl	0.002	mg/L	< 0.002
Coumaphos	0.02	mg/L	< 0.02
Demeton-S	0.002	mg/L	< 0.002
Demeton-O	0.002	mg/L	< 0.002
Diazinon	0.002	mg/L	< 0.002
Dichlorvos	0.002	mg/L	< 0.002
Dimethoate	0.002	mg/L	< 0.002
Disulfoton	0.002	mg/L	< 0.002
EPN	0.002	mg/L	< 0.002
Ethion	0.002	mg/L	< 0.002
Ethoprop	0.002	mg/L	< 0.002
Ethyl parathion	0.002	mg/L	< 0.002
Fenitrothion	0.002	mg/L	< 0.002

Client Sample ID			RB3
Sample Matrix			Water
Eurofins Sample No.			W22-Ja12143
Date Sampled			Jan 14, 2022
Test/Reference	LOR	Unit	
Organophosphorus Pesticides			
Fensulfothion	0.002	mg/L	< 0.002
Fenthion	0.002	mg/L	< 0.002
Malathion	0.002	mg/L	< 0.002
Merphos	0.002	mg/L	< 0.002
Methyl parathion	0.002	mg/L	< 0.002
Mevinphos	0.002	mg/L	< 0.002
Monocrotophos	0.002	mg/L	< 0.002
Naled	0.002	mg/L	< 0.002
Omethoate	0.02	mg/L	< 0.02
Phorate	0.002	mg/L	< 0.002
Pirimiphos-methyl	0.02	mg/L	< 0.02
Pyrazophos	0.002	mg/L	< 0.002
Ronnel	0.002	mg/L	< 0.002
Terbufos	0.002	mg/L	< 0.002
Tetrachlorvinphos	0.002	mg/L	< 0.002
Tokuthion	0.002	mg/L	< 0.002
Trichloronate	0.002	mg/L	< 0.002
Triphenylphosphate (surr.)	1	%	INT
Polychlorinated Biphenyls			
Aroclor-1016	0.005	mg/L	< 0.005
Aroclor-1221	0.005	mg/L	< 0.005
Aroclor-1232	0.005	mg/L	< 0.005
Aroclor-1242	0.005	mg/L	< 0.005
Aroclor-1248	0.005	mg/L	< 0.005
Aroclor-1254	0.005	mg/L	< 0.005
Aroclor-1260	0.005	mg/L	< 0.005
Total PCB*	0.005	mg/L	< 0.005
Dibutylchlorendate (surr.)	1	%	INT
Tetrachloro-m-xylene (surr.)	1	%	141
Total Recoverable Hydrocarbons - 2013 NEPM Fractions			
TRH >C10-C16	0.05	mg/L	< 0.05
TRH >C16-C34	0.1	mg/L	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1
Metals M8			
Arsenic	0.001	mg/L	< 0.001
Cadmium	0.0002	mg/L	< 0.0002
Chromium	0.001	mg/L	< 0.001
Copper	0.001	mg/L	< 0.001
Lead	0.001	mg/L	< 0.001
Mercury	0.0001	mg/L	< 0.0001
Nickel	0.001	mg/L	< 0.001
Zinc	0.005	mg/L	< 0.005

Sample History

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

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	Jan 22, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Jan 19, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 19, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Jan 22, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Jan 22, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Jan 19, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Eurofins Suite B15			
Organochlorine Pesticides	Sydney	Jan 22, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			
Organophosphorus Pesticides	Sydney	Jan 22, 2022	7 Days
- Method: LTM-ORG-2200 Organophosphorus Pesticides by GC-MS			
Polychlorinated Biphenyls	Sydney	Jan 22, 2022	7 Days
- Method: LTM-ORG-2220 OCP & PCB in Soil and Water			

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Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**								
1	RB3	Jan 14, 2022		Water	W22-Ja12143			X			X		
2	TRIP SPIKE	Jan 14, 2022		Soil	W22-Ja12144								X
3	TRIP BLANK	Jan 14, 2022		Soil	W22-Ja12145							X	
4	BH10_0-0.1	Jan 14, 2022		Soil	W22-Ja12146		X						
5	BH10_0.1-0.2	Jan 14, 2022		Soil	W22-Ja12147	X		X		X	X		
6	DUP4	Jan 14, 2022		Soil	W22-Ja12148			X		X	X		
7	BH10_0.4-0.5	Jan 14, 2022		Soil	W22-Ja12150		X						
8	BH10_0.9-1.0	Jan 14, 2022		Soil	W22-Ja12151					X	X		
9	BH10_1.5-1.95	Jan 14, 2022		Soil	W22-Ja12152				X				

Date Reported:Jan 28, 2022

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IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
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NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 855638
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 17, 2022 5:37 PM
Due: Jan 25, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Asbestos - AS4964	HOLD	Eurofins Suite B15	SPOCAS Suite	Moisture Set	Eurofins Suite B7	BTEXN and Volatile TRH	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254													
Sydney Laboratory - NATA # 1261 Site # 18217						X	X	X		X	X	X	X
Brisbane Laboratory - NATA # 1261 Site # 20794									X				
Mayfield Laboratory - NATA # 1261 Site # 25079													
Perth Laboratory - NATA # 2377 Site # 2370													
External Laboratory													
10	BH10_3.0-3.45	Jan 14, 2022		Soil	W22-Ja12153		X						
11	BH10_4.5-4.95	Jan 14, 2022		Soil	W22-Ja12154		X						
Test Counts						1	4	3	1	3	4	1	1

Date Reported:Jan 28, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. Duplicate RPDs are calculated from raw analytical data thus it is possible to have two sets of data.

Quality Control Results

Test	Lab Sample ID	QA Source	Units	Result 1	Result 2	RPD	Acceptance Limits	Pass Limits	Qualifying Code
Method Blank									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
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									
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	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions									
TRH C10-C14			%	94			70-130	Pass	
LCS - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions									
TRH >C10-C16			%	83			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	S22-Ja21844	NCP	%	85			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S22-Ja21844	NCP	%	98			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S22-Ja16732	NCP	%	97			75-125	Pass	
Cadmium	S22-Ja16732	NCP	%	102			75-125	Pass	
Chromium	S22-Ja16732	NCP	%	100			75-125	Pass	
Copper	S22-Ja16732	NCP	%	98			75-125	Pass	
Lead	S22-Ja16732	NCP	%	102			75-125	Pass	
Mercury	S22-Ja17433	NCP	%	110			75-125	Pass	
Nickel	S22-Ja16732	NCP	%	99			75-125	Pass	
Zinc	S22-Ja16732	NCP	%	99			75-125	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	S22-Ja12488	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
TRH C10-C14	S22-Ja18497	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
TRH C15-C28	S22-Ja18497	NCP	mg/L	< 1	< 1	<1	30%	Pass	
TRH C29-C36	S22-Ja18497	NCP	mg/L	< 1	< 1	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja12488	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Ja12488	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-Ja12488	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Ja12488	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
o-Xylene	S22-Ja12488	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-Ja12488	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-Ja12488	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S22-Ja12488	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	

Duplicate									
Polycyclic Aromatic Hydrocarbons				Result 1	Result 2	RPD			
Acenaphthene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Acenaphthylene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Anthracene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benz(a)anthracene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(a)pyrene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(b&j)fluoranthene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(g.h.i)perylene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Benzo(k)fluoranthene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Chrysene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Dibenz(a.h)anthracene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluoranthene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Fluorene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Indeno(1.2.3-cd)pyrene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Naphthalene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Phenanthrene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Pyrene	S22-Ja18497	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Duplicate									
Organochlorine Pesticides				Result 1	Result 2	RPD			
Chlordanes - Total	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
4.4'-DDD	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDE	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
4.4'-DDT	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
a-HCH	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Aldrin	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
b-HCH	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
d-HCH	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Dieldrin	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan I	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan II	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endosulfan sulphate	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin aldehyde	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Endrin ketone	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
g-HCH (Lindane)	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Heptachlor epoxide	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Hexachlorobenzene	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Methoxychlor	S22-Ja18497	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Toxaphene	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Azinphos-methyl	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Bolstar	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorfenvinphos	S22-Ja18497	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Chlorpyrifos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Chlorpyrifos-methyl	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Coumaphos	S22-Ja18497	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Demeton-S	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Demeton-O	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Diazinon	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dichlorvos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Dimethoate	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Disulfoton	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
EPN	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
Organophosphorus Pesticides				Result 1	Result 2	RPD			
Ethion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethoprop	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ethyl parathion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenitrothion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fensulfothion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Fenthion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Malathion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Merphos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Methyl parathion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Mevinphos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Monocrotophos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Naled	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Omethoate	S22-Ja18497	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Phorate	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Pirimiphos-methyl	S22-Ja18497	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Pyrazophos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Ronnel	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Terbufos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tetrachlorvinphos	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Tokuthion	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Trichloronate	S22-Ja18497	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	
Duplicate									
Polychlorinated Biphenyls				Result 1	Result 2	RPD			
Aroclor-1016	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1221	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1232	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1242	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1248	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1254	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Aroclor-1260	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Total PCB*	S22-Ja18497	NCP	mg/L	< 0.005	< 0.005	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	S22-Ja18497	NCP	mg/L	< 0.5	< 0.5	<1	30%	Pass	
TRH >C16-C34	S22-Ja18497	NCP	mg/L	< 1	< 1	<1	30%	Pass	
TRH >C34-C40	S22-Ja18497	NCP	mg/L	< 1	< 1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	S22-Ja18692	NCP	mg/L	0.002	0.002	13	30%	Pass	
Cadmium	S22-Ja18692	NCP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	S22-Ja18692	NCP	mg/L	< 0.001	0.001	13	30%	Pass	
Copper	S22-Ja18692	NCP	mg/L	0.004	0.005	13	30%	Pass	
Lead	S22-Ja18692	NCP	mg/L	0.001	0.002	16	30%	Pass	
Mercury	S22-Ja18692	NCP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	S22-Ja18692	NCP	mg/L	0.002	0.002	7.0	30%	Pass	
Zinc	S22-Ja18692	NCP	mg/L	0.006	0.007	22	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:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **ES2146745**	Page	: 1 of 6
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Locke	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	:	Date Samples Received	: 21-Dec-2021 14:15
Order number	: ----	Date Analysis Commenced	: 24-Dec-2021
C-O-C number	: ----	Issue Date	: 05-Jan-2022 16:08
Sampler	: ----		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Trip 3	----	----	----	----
			Sampling date / time	16-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2146745-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**23.3**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	**6**	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**46**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**26**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**12**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**9**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**18**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----
Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	----	----	----	----
^ Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	----	----	----	----
^ Benzo(a)pyrene TEQ (half LOR)	----	0.5	mg/kg	**0.6**	----	----	----	----
^ Benzo(a)pyrene TEQ (LOR)	----	0.5	mg/kg	**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons								
C6 - C9 Fraction	----	10	mg/kg	<10	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Trip 3	----	----	----	----
			Sampling date / time	16-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2146745-001	--------	--------	--------	--------
				Result	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons - Continued								
C10 - C14 Fraction	----	50	mg/kg	<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg	<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg	<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg	<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions								
C6 - C10 Fraction	C6_C10	10	mg/kg	<10	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg	<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg	<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg	<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg	<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg	<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg	<50	----	----	----	----
EP080: BTEXN								
Benzene	71-43-2	0.2	mg/kg	<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg	<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	----	----	----	----
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**97.2**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**103**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**95.5**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**86.8**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**105**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**103**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**87.0**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**95.3**	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Trip 3	----	----	----	----
				Sampling date / time	16-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		ES2146745-001	--------	--------	--------	--------
					Result	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates - Continued									
4-Bromofluorobenzene	460-00-4	0.2	%		**88.4**	**----**	**----**	**----**	**----**

Surrogate Control Limits

Sub-Matrix: **SOIL**		Recovery Limits (%)	
Compound	*CAS Number*	*Low*	*High*
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **ES2146745**	Page	: 1 of 7
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Locke	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 277-289 Woodpark Road Smithfield NSW Australia 2164
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	:	Date Samples Received	: 21-Dec-2021
Order number	: ----	Date Analysis Commenced	: 24-Dec-2021
C-O-C number	: ----	Issue Date	: 05-Jan-2022
Sampler	: ----		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

Accreditation No. 825
Accredited for compliance with
ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Alex Rossi	Organic Chemist	Sydney Inorganics, Smithfield, NSW
Alex Rossi	Organic Chemist	Sydney Organics, Smithfield, NSW
Wisam Marassa	Inorganics Coordinator	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4101900)									
EB2136927-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	64	77	18.8	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	39	40	2.8	0% - 20%
		EG005T: Arsenic	7440-38-2	5	mg/kg	14	14	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	34	46	31.2	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	14	18	26.9	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	55	71	25.7	0% - 50%
ES2146881-002	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	18	23	25.8	0% - 50%
		EG005T: Nickel	7440-02-0	2	mg/kg	7	8	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	12	14	10.3	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	44	51	16.5	0% - 50%
		EG005T: Lead	7439-92-1	5	mg/kg	856	920	7.2	0% - 20%
		EG005T: Zinc	7440-66-6	5	mg/kg	382	413	7.7	0% - 20%
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4101911)									
EB2136927-005	Anonymous	EA055: Moisture Content	----	0.1	%	35.5	36.9	3.7	0% - 20%
ES2146818-005	Anonymous	EA055: Moisture Content	----	0.1	%	23.5	23.3	1.0	0% - 20%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4101901)									
ES2146881-002	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.4	0.4	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4093543)									
EP2115445-005	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4093543) - continued									
EP2115445-005	Anonymous	EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP2115445-001	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4093542)									
EP2115445-005	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	620	570	8.3	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	720	710	1.9	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4093542) - continued									
EP2115445-005	Anonymous	EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP2115445-001	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	2760	3080	11.1	0% - 20%
		EP071: C29 - C36 Fraction	----	100	mg/kg	1930	2040	5.7	0% - 20%
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4097853)									
ES2146756-001	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2146756-002	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4093542)									
EP2115445-005	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	1170	1080	8.6	0% - 50%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	440	440	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP2115445-001	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	4050	4520	11.0	0% - 20%
		EP071: >C34 - C40 Fraction	----	100	mg/kg	1280	1310	2.2	0% - 50%
		EP071: >C10 - C16 Fraction	----	50	mg/kg	70	90	21.8	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4097853)									
ES2146756-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2146756-002	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 4097853)									
ES2146756-001	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2146756-002	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4101900)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	108	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	106	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	118	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	103	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	108	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	108	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	97.8	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4101901)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	85.6	70.0	125
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4093543)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	91.9	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	93.4	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	93.2	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	98.4	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	102	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	101	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	96.3	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	96.4	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	96.6	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	90.8	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	93.3	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	92.2	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	97.7	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	93.2	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	99.9	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4093542)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	92.0	75.0	129
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	91.3	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	87.0	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4097853)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	83.5	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4093542)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4093542) - continued								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	89.1	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	89.9	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	91.0	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4097853)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	86.2	68.4	128
EP080: BTEXN (QCLot: 4097853)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	82.4	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	83.9	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	86.6	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	87.2	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	86.4	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	82.2	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4101900)							
EB2136927-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	95.3	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	105	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	86.0	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	108	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	104	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	101	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	102	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4101901)							
EB2136927-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	90.4	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4093543)							
EP2115445-001	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	91.6	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	103	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4093542)							
EP2115445-001	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	84.1	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	78.4	53.0	131

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4093542) - continued							
EP2115445-001	Anonymous	EP071: C29 - C36 Fraction	----	2060 mg/kg	83.9	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4097853)							
ES2146756-001	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	90.3	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4093542)							
EP2115445-001	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	86.2	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	79.1	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	84.4	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4097853)							
ES2146756-001	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	94.0	70.0	130
EP080: BTEXN (QCLot: 4097853)							
ES2146756-001	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	80.8	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	79.9	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	82.5	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	82.5	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	83.3	70.0	130
		EP080: Naphthalene	91-20-3	2.5 mg/kg	74.3	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **ES2146745**	Page	: 1 of 4
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division Sydney
Contact	: Matthew Locke	Telephone	: + 61 2 8784 8555
Project	:	Date Samples Received	: 21-Dec-2021
Site	:	Issue Date	: 05-Jan-2022
Sampler	: ----	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Total Mercury by FIMS	1	20	5.00	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
Trip 3	**16-Dec-2021**	**----**	----	----	**29-Dec-2021**	30-Dec-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
Trip 3	**16-Dec-2021**	**30-Dec-2021**	14-Jun-2022	✓	**30-Dec-2021**	14-Jun-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
Trip 3	**16-Dec-2021**	**30-Dec-2021**	13-Jan-2022	✓	**30-Dec-2021**	13-Jan-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
Trip 3	**16-Dec-2021**	**30-Dec-2021**	30-Dec-2021	✓	**31-Dec-2021**	08-Feb-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
Trip 3	**16-Dec-2021**	**24-Dec-2021**	30-Dec-2021	✓	**24-Dec-2021**	30-Dec-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
Trip 3	**16-Dec-2021**	**30-Dec-2021**	30-Dec-2021	✓	**31-Dec-2021**	08-Feb-2022	✓
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
Trip 3	**16-Dec-2021**	**24-Dec-2021**	30-Dec-2021	✓	**24-Dec-2021**	30-Dec-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
Trip 3	**16-Dec-2021**	**30-Dec-2021**	30-Dec-2021	✓	**31-Dec-2021**	08-Feb-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
Trip 3	**16-Dec-2021**	**24-Dec-2021**	30-Dec-2021	✓	**24-Dec-2021**	30-Dec-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	2	17	**11.76**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	19	**10.53**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	17	**5.88**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	19	**5.26**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Page ___ of ___

TETRA TECH

Consigning Office: Chatswood
Report Results to: Matthew Locke
Invoices to: general.admin@coffey.com
Mobile:
Phone:
Email: matthew.locke@tetratech.com
Email: della.sarabia@tetratech.com

Project No.:
Project Name: St George
Sampler's Name: Cameron Prentice
Task No.:
Laboratory:
Project Manager: Della Sarabia
Courier:
Quote number (if different to current quoted prices):
Special Instructions:

Sampling Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil, etc)	Container Type & Preservation*	T-A-T (specify)	Suite M8 (metals 8)	Suite 64 (TRH/BTEX/PAH)	Suite 815 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS			NOTES
	BH4_0.1-0.2	16/12/21		Soil	J, A	STANDARD TAT	/	/	/	/										Container Types: P= PFAS Jar, J= Glass Jar, A= Asbestos bag, ASS= Acid Sulfate bag
	BH4_0.4-0.5	↓		↓	J	↓														
	BH4_0.9-1.0	↓		↓	J	↓	/	/												
	BH4_1.9-2.0	↓		↓	J	↓														
	BH4_2.9-3.0	↓		↓	J	↓														
	BH4_3.9-4.0	↓		↓	J	↓														
	BH4_4.9-5.0	↓		↓	J	↓														
	BH6_0.1-0.2	↓		↓	J, A	↓														
	BH6_0.4-0.5	↓		↓	J, A	↓	/	/	/		/	/	/							
	BH6_0.9-1.0	↓		↓	J	↓														
	BH6_1.9-2.0	↓		↓	J	↓	/	/												
	BH6_2.9-3.0	↓		↓	J	↓														
	BH6_3.9-4.0	↓		↓	J	↓														
	BH6_4.9-5.0	↓		↓	J	↓														
	Dup3	↓		↓	J	↓	/	/												
	Trip3	↓		↓	J	↓	/	/	→	→	→	→	→	→	→					SEND TO ALS

RELINQUISHED BY		RECEIVED BY	
Name: Cameron Prentice	Date: 16/12/21	Name:	Date:
Coffey	Time: 16:30	Company:	Time:
Name:	Date:	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Received in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☐
Lab. Ref/Batch No

*Container Type & Preservation Codes: P - Plastic, G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preserved, I - Ice, ST - Sodium Thiosulfate, NP - No Preservative

Environmental Division
Sydney
Work Order Reference
ES2146745

Telephone : + 61-2-8784 8555

Rec SOS [signature] 21/12/21 1415
12.6 -

ALS Environmental

CERTIFICATE OF ANALYSIS

Work Order	: **EW2105304**	Page	: 1 of 7
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division NSW South Coast
Contact	: DELFA SARABIA	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE295074 St George Dragons	Date Samples Received	: 09-Dec-2021 13:15
Order number	: ----	Date Analysis Commenced	: 13-Dec-2021
C-O-C number	: ----	Issue Date	: 18-Dec-2021 14:34
Sampler	: CAMERON PRENTICE		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results
- Surrogate Control Limits

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QA/QC Compliance Assessment to assist with Quality Review and Sample Receipt Notification.

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

When sampling time information is not provided by the client, sampling dates are shown without a time component. In these instances, the time component has been assumed by the laboratory for processing purposes.

Where a result is required to meet compliance limits the associated uncertainty must be considered. Refer to the ALS Contact for details.

Key : CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
^ = This result is computed from individual analyte detections at or above the level of reporting
ø = ALS is not NATA accredited for these tests.
~ = Indicates an estimated value.

- **Analytical work for this work order will be conducted at ALS Sydney.**
- Benzo(a)pyrene Toxicity Equivalent Quotient (TEQ) per the NEPM (2013) is the sum total of the concentration of the eight carcinogenic PAHs multiplied by their Toxicity Equivalence Factor (TEF) relative to Benzo(a)pyrene. TEF values are provided in brackets as follows: Benz(a)anthracene (0.1), Chrysene (0.01), Benzo(b+j) & Benzo(k)fluoranthene (0.1), Benzo(a)pyrene (1.0), Indeno(1.2.3.cd)pyrene (0.1), Dibenz(a.h)anthracene (1.0), Benzo(g.h.i)perylene (0.01). Less than LOR results for 'TEQ Zero' are treated as zero, for 'TEQ 1/2LOR' are treated as half the reported LOR, and for 'TEQ LOR' are treated as being equal to the reported LOR. Note: TEQ 1/2LOR and TEQ LOR will calculate as 0.6mg/Kg and 1.2mg/Kg respectively for samples with non-detects for all of the eight TEQ PAHs.
- EP080: Where reported, Total Xylenes is the sum of the reported concentrations of m&p-Xylene and o-Xylene at or above the LOR.
- EP068: Where reported, Total Chlordane (sum) is the sum of the reported concentrations of cis-Chlordane and trans-Chlordane at or above the LOR.
- EP068: Where reported, Total OCP is the sum of the reported concentrations of all Organochlorine Pesticides at or above LOR.
- EP075(SIM): Where reported, Total Cresol is the sum of the reported concentrations of 2-Methylphenol and 3- & 4-Methylphenol at or above the LOR.

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Trip 1	----	----	----	----
			Sampling date / time	08-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EW2105304-001	--------	--------	--------	--------
				Result	----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	**26.4**	----	----	----	----
EG005(ED093)T: Total Metals by ICP-AES								
Arsenic	7440-38-2	5	mg/kg	<5	----	----	----	----
Cadmium	7440-43-9	1	mg/kg	<1	----	----	----	----
Chromium	7440-47-3	2	mg/kg	**22**	----	----	----	----
Copper	7440-50-8	5	mg/kg	**13**	----	----	----	----
Lead	7439-92-1	5	mg/kg	**12**	----	----	----	----
Nickel	7440-02-0	2	mg/kg	**7**	----	----	----	----
Zinc	7440-66-6	5	mg/kg	**14**	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----
EP066: Polychlorinated Biphenyls (PCB)								
Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	----	----	----	----
EP068A: Organochlorine Pesticides (OC)								
alpha-BHC	319-84-6	0.05	mg/kg	<0.05	----	----	----	----
Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	----	----	----	----
beta-BHC	319-85-7	0.05	mg/kg	<0.05	----	----	----	----
gamma-BHC	58-89-9	0.05	mg/kg	<0.05	----	----	----	----
delta-BHC	319-86-8	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor	76-44-8	0.05	mg/kg	<0.05	----	----	----	----
Aldrin	309-00-2	0.05	mg/kg	<0.05	----	----	----	----
Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	----	----	----	----
^ Total Chlordane (sum)	----	0.05	mg/kg	<0.05	----	----	----	----
trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	----	----	----	----
alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	----	----	----	----
cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	----	----	----	----
Dieldrin	60-57-1	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	----	----	----	----
Endrin	72-20-8	0.05	mg/kg	<0.05	----	----	----	----
beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	----	----	----	----
^ Endosulfan (sum)	115-29-7	0.05	mg/kg	<0.05	----	----	----	----
4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	----	----	----	----
Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	----	----	----	----
Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Trip 1	----	----	----	----
			Sampling date / time	08-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EW2105304-001	--------	--------	--------	--------
				Result	----	----	----	----
EP068A: Organochlorine Pesticides (OC) - Continued								
4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	----	----	----	----
Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	----	----	----	----
Methoxychlor	72-43-5	0.2	mg/kg	<0.2	----	----	----	----
^ Sum of Aldrin + Dieldrin	309-00-2/60-57-1	0.05	mg/kg	<0.05	----	----	----	----
^ Sum of DDD + DDE + DDT	72-54-8/72-55-9/50-2	0.05	mg/kg	<0.05	----	----	----	----
EP068B: Organophosphorus Pesticides (OP)								
Dichlorvos	62-73-7	0.05	mg/kg	<0.05	----	----	----	----
Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	----	----	----	----
Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	----	----	----	----
Dimethoate	60-51-5	0.05	mg/kg	<0.05	----	----	----	----
Diazinon	333-41-5	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	----	----	----	----
Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	----	----	----	----
Malathion	121-75-5	0.05	mg/kg	<0.05	----	----	----	----
Fenthion	55-38-9	0.05	mg/kg	<0.05	----	----	----	----
Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	----	----	----	----
Parathion	56-38-2	0.2	mg/kg	<0.2	----	----	----	----
Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	----	----	----	----
Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	----	----	----	----
Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	----	----	----	----
Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	----	----	----	----
Prothiofos	34643-46-4	0.05	mg/kg	<0.05	----	----	----	----
Ethion	563-12-2	0.05	mg/kg	<0.05	----	----	----	----
Carbophenothion	786-19-6	0.05	mg/kg	<0.05	----	----	----	----
Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons								
Naphthalene	91-20-3	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	----	----	----	----
Acenaphthene	83-32-9	0.5	mg/kg	<0.5	----	----	----	----
Fluorene	86-73-7	0.5	mg/kg	<0.5	----	----	----	----
Phenanthrene	85-01-8	0.5	mg/kg	<0.5	----	----	----	----
Anthracene	120-12-7	0.5	mg/kg	<0.5	----	----	----	----
Fluoranthene	206-44-0	0.5	mg/kg	<0.5	----	----	----	----
Pyrene	129-00-0	0.5	mg/kg	<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)				Sample ID	Trip 1	----	----	----	----
				Sampling date / time	08-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit		EW2105304-001	--------	--------	--------	--------
					Result	----	----	----	----
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons - Continued									
Benz(a)anthracene	56-55-3	0.5	mg/kg		<0.5	----	----	----	----
Chrysene	218-01-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(k)fluoranthene	207-08-9	0.5	mg/kg		<0.5	----	----	----	----
Benzo(a)pyrene	50-32-8	0.5	mg/kg		<0.5	----	----	----	----
Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg		<0.5	----	----	----	----
Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg		<0.5	----	----	----	----
Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg		<0.5	----	----	----	----
^ **Sum of polycyclic aromatic hydrocarbons**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (zero)**	----	0.5	mg/kg		<0.5	----	----	----	----
^ **Benzo(a)pyrene TEQ (half LOR)**	----	0.5	mg/kg		**0.6**	----	----	----	----
^ **Benzo(a)pyrene TEQ (LOR)**	----	0.5	mg/kg		**1.2**	----	----	----	----
EP080/071: Total Petroleum Hydrocarbons									
C6 - C9 Fraction	----	10	mg/kg		<10	----	----	----	----
C10 - C14 Fraction	----	50	mg/kg		<50	----	----	----	----
C15 - C28 Fraction	----	100	mg/kg		<100	----	----	----	----
C29 - C36 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **C10 - C36 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions									
C6 - C10 Fraction	C6_C10	10	mg/kg		<10	----	----	----	----
^ **C6 - C10 Fraction minus BTEX (F1)**	C6_C10-BTEX	10	mg/kg		<10	----	----	----	----
>C10 - C16 Fraction	----	50	mg/kg		<50	----	----	----	----
>C16 - C34 Fraction	----	100	mg/kg		<100	----	----	----	----
>C34 - C40 Fraction	----	100	mg/kg		<100	----	----	----	----
^ **>C10 - C40 Fraction (sum)**	----	50	mg/kg		<50	----	----	----	----
^ **>C10 - C16 Fraction minus Naphthalene (F2)**	----	50	mg/kg		<50	----	----	----	----
EP080: BTEXN									
Benzene	71-43-2	0.2	mg/kg		<0.2	----	----	----	----
Toluene	108-88-3	0.5	mg/kg		<0.5	----	----	----	----
Ethylbenzene	100-41-4	0.5	mg/kg		<0.5	----	----	----	----
meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg		<0.5	----	----	----	----
ortho-Xylene	95-47-6	0.5	mg/kg		<0.5	----	----	----	----

Analytical Results

Sub-Matrix: SOIL (Matrix: SOIL)			Sample ID	Trip 1	----	----	----	----
			Sampling date / time	08-Dec-2021 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	EW2105304-001	--------	--------	--------	--------
				Result	----	----	----	----
EP080: BTEXN - Continued								
^ **Sum of BTEX**	----	0.2	mg/kg	<0.2	----	----	----	----
^ **Total Xylenes**	----	0.5	mg/kg	<0.5	----	----	----	----
Naphthalene	91-20-3	1	mg/kg	<1	----	----	----	----
EP066S: PCB Surrogate								
Decachlorobiphenyl	2051-24-3	0.1	%	**128**	----	----	----	----
EP068S: Organochlorine Pesticide Surrogate								
Dibromo-DDE	21655-73-2	0.05	%	**124**	----	----	----	----
EP068T: Organophosphorus Pesticide Surrogate								
DEF	78-48-8	0.05	%	**92.1**	----	----	----	----
EP075(SIM)S: Phenolic Compound Surrogates								
Phenol-d6	13127-88-3	0.5	%	**81.0**	----	----	----	----
2-Chlorophenol-D4	93951-73-6	0.5	%	**82.8**	----	----	----	----
2.4.6-Tribromophenol	118-79-6	0.5	%	**79.1**	----	----	----	----
EP075(SIM)T: PAH Surrogates								
2-Fluorobiphenyl	321-60-8	0.5	%	**102**	----	----	----	----
Anthracene-d10	1719-06-8	0.5	%	**96.6**	----	----	----	----
4-Terphenyl-d14	1718-51-0	0.5	%	**84.4**	----	----	----	----
EP080S: TPH(V)/BTEX Surrogates								
1.2-Dichloroethane-D4	17060-07-0	0.2	%	**89.3**	----	----	----	----
Toluene-D8	2037-26-5	0.2	%	**99.3**	----	----	----	----
4-Bromofluorobenzene	460-00-4	0.2	%	**82.2**	----	----	----	----

Surrogate Control Limits

Sub-Matrix: SOIL		Recovery Limits (%)	
Compound	CAS Number	Low	High
EP066S: PCB Surrogate			
Decachlorobiphenyl	2051-24-3	39	149
EP068S: Organochlorine Pesticide Surrogate			
Dibromo-DDE	21655-73-2	49	147
EP068T: Organophosphorus Pesticide Surrogate			
DEF	78-48-8	35	143
EP075(SIM)S: Phenolic Compound Surrogates			
Phenol-d6	13127-88-3	63	123
2-Chlorophenol-D4	93951-73-6	66	122
2.4.6-Tribromophenol	118-79-6	40	138
EP075(SIM)T: PAH Surrogates			
2-Fluorobiphenyl	321-60-8	70	122
Anthracene-d10	1719-06-8	66	128
4-Terphenyl-d14	1718-51-0	65	129
EP080S: TPH(V)/BTEX Surrogates			
1.2-Dichloroethane-D4	17060-07-0	73	133
Toluene-D8	2037-26-5	74	132
4-Bromofluorobenzene	460-00-4	72	130

Inter-Laboratory Testing

Analysis conducted by ALS Sydney, NATA accreditation no. 825, site no. 10911 (Chemistry) 14913 (Biology).

(SOIL) EP080: BTEXN
(SOIL) EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions
(SOIL) EP080S: TPH(V)/BTEX Surrogates
(SOIL) EP075(SIM)B: Polynuclear Aromatic Hydrocarbons
(SOIL) EP075(SIM)S: Phenolic Compound Surrogates
(SOIL) EP075(SIM)T: PAH Surrogates
(SOIL) EP068A: Organochlorine Pesticides (OC)
(SOIL) EP068B: Organophosphorus Pesticides (OP)
(SOIL) EP068T: Organophosphorus Pesticide Surrogate
(SOIL) EP068S: Organochlorine Pesticide Surrogate
(SOIL) EA055: Moisture Content (Dried @ 105-110°C)
(SOIL) EP066: Polychlorinated Biphenyls (PCB)
(SOIL) EP066S: PCB Surrogate
(SOIL) EG035T: Total Recoverable Mercury by FIMS
(SOIL) EG005(ED093)T: Total Metals by ICP-AES
(SOIL) EP080/071: Total Petroleum Hydrocarbons

ALS Environmental

QUALITY CONTROL REPORT

Work Order	: **EW2105304**	Page	: 1 of 10
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division NSW South Coast
Contact	: DELFA SARABIA	Contact	: Khaleda Ataei
Address	: LEVEL 19, TOWER B- CITADEL TOWER 799 PACIFIC HIGHWAY CHATSWOOD NSW, AUSTRALIA 2067	Address	: 1/19 Ralph Black Dr, North Wollongong 2500 NSW Australia
Telephone	: ----	Telephone	: + 61 2 8784 8555
Project	: SYDGE295074 St George Dragons	Date Samples Received	: 09-Dec-2021
Order number	: ----	Date Analysis Commenced	: 13-Dec-2021
C-O-C number	: ----	Issue Date	: 18-Dec-2021
Sampler	: CAMERON PRENTICE		
Site	:		
Quote number	: EN/222		
No. of samples received	: 1		
No. of samples analysed	: 1		

ilac-MRA NATA
Accreditation No. 825
Accredited for compliance with ISO/IEC 17025 - Testing

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted, unless the sampling was conducted by ALS. This document shall not be reproduced, except in full.

This Quality Control Report contains the following information:

- Laboratory Duplicate (DUP) Report; Relative Percentage Difference (RPD) and Acceptance Limits
- Method Blank (MB) and Laboratory Control Spike (LCS) Report; Recovery and Acceptance Limits
- Matrix Spike (MS) Report; Recovery and Acceptance Limits

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is carried out in compliance with procedures specified in 21 CFR Part 11.

Signatories	*Position*	*Accreditation Category*
Edwandy Fadjar	Organic Coordinator	Sydney Organics, Smithfield, NSW
Evie Sidarta	Inorganic Chemist	Sydney Inorganics, Smithfield, NSW
Ivan Taylor	Analyst	Sydney Inorganics, Smithfield, NSW

General Comments

The analytical procedures used by ALS have been developed from established internationally recognised procedures such as those published by the USEPA, APHA, AS and NEPM. In house developed procedures are fully validated and are often at the client request.

Where moisture determination has been performed, results are reported on a dry weight basis.

Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis. Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Key : Anonymous = Refers to samples which are not specifically part of this work order but formed part of the QC process lot
CAS Number = CAS registry number from database maintained by Chemical Abstracts Services. The Chemical Abstracts Service is a division of the American Chemical Society.
LOR = Limit of reporting
RPD = Relative Percentage Difference
# = Indicates failed QC

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	LOR	Unit	Original Result	Duplicate Result	RPD (%)	Acceptable RPD (%)
EG005(ED093)T: Total Metals by ICP-AES (QC Lot: 4074540)									
ES2145195-040	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	7	7	0.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	7	8	12.6	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	<5	<5	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	13	28	71.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	10	10	0.0	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	17	19	11.3	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 4074547)									
ES2145195-046	Anonymous	EA055: Moisture Content	----	0.1	%	7.5	7.0	6.3	No Limit
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 4074539)									
ES2145195-034	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	0.2	0.2	0.0	No Limit
ES2145051-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP066: Polychlorinated Biphenyls (PCB) (QC Lot: 4068395)									
ES2144845-003	Anonymous	EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4068394)									
ES2144845-003	Anonymous	EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	<0.05	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP068A: Organochlorine Pesticides (OC) (QC Lot: 4068394) - continued									
ES2144845-003	Anonymous	EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP068B: Organophosphorus Pesticides (OP) (QC Lot: 4068394)									
ES2144845-003	Anonymous	EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	<0.05	0.0	No Limit
		EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4068393)									
ES2144845-003	Anonymous	EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QC Lot: 4068393) - continued									
ES2144845-003	Anonymous	EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Sum of polycyclic aromatic hydrocarbons	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP075(SIM): Benzo(a)pyrene TEQ (zero)	----	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4068392)									
ES2144845-003	Anonymous	EP071: C15 - C28 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C29 - C36 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: C10 - C14 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Petroleum Hydrocarbons (QC Lot: 4073304)									
ES2144640-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
ES2145064-004	Anonymous	EP080: C6 - C9 Fraction	----	10	mg/kg	<10	<10	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4068392)									
ES2144845-003	Anonymous	EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	<100	0.0	No Limit
		EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	<50	0.0	No Limit
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QC Lot: 4073304)									
ES2144640-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
ES2145064-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	<10	0.0	No Limit
EP080: BTEXN (QC Lot: 4073304)									
ES2144640-004	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit
ES2145064-004	Anonymous	EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	<0.2	0.0	No Limit
		EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	<0.5	0.0	No Limit

Sub-Matrix: **SOIL**

				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*LOR*	*Unit*	*Original Result*	*Duplicate Result*	*RPD (%)*	*Acceptable RPD (%)*
EP080: BTEXN (QC Lot: 4073304) - continued									
ES2145064-004	Anonymous	EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	<0.5	0.0	No Limit
		EP080: Naphthalene	91-20-3	1	mg/kg	<1	<1	0.0	No Limit

Method Blank (MB) and Laboratory Control Sample (LCS) Report

The quality control term Method / Laboratory Blank refers to an analyte free matrix to which all reagents are added in the same volumes or proportions as used in standard sample preparation. The purpose of this QC parameter is to monitor potential laboratory contamination. The quality control term Laboratory Control Sample (LCS) refers to a certified reference material, or a known interference free matrix spiked with target analytes. The purpose of this QC parameter is to monitor method precision and accuracy independent of sample matrix. Dynamic Recovery Limits are based on statistical evaluation of processed LCS.

Sub-Matrix: **SOIL**

				Method Blank (MB) Report	Laboratory Control Spike (LCS) Report			
					Spike	Spike Recovery (%)	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result	Concentration	LCS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4074540)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	102	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	106	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	108	68.0	132
EG005T: Copper	7440-50-8	5	mg/kg	<5	52.9 mg/kg	109	89.0	111
EG005T: Lead	7439-92-1	5	mg/kg	<5	60.8 mg/kg	97.7	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	95.4	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	84.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4074539)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	94.8	70.0	125
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4068395)								
EP066: Total Polychlorinated biphenyls	----	0.1	mg/kg	<0.1	1 mg/kg	101	62.0	126
EP068A: Organochlorine Pesticides (OC) (QCLot: 4068394)								
EP068: alpha-BHC	319-84-6	0.05	mg/kg	<0.05	0.5 mg/kg	100	69.0	113
EP068: Hexachlorobenzene (HCB)	118-74-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	65.0	117
EP068: beta-BHC	319-85-7	0.05	mg/kg	<0.05	0.5 mg/kg	98.8	67.0	119
EP068: gamma-BHC	58-89-9	0.05	mg/kg	<0.05	0.5 mg/kg	102	68.0	116
EP068: delta-BHC	319-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	102	65.0	117
EP068: Heptachlor	76-44-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.6	67.0	115
EP068: Aldrin	309-00-2	0.05	mg/kg	<0.05	0.5 mg/kg	102	69.0	115
EP068: Heptachlor epoxide	1024-57-3	0.05	mg/kg	<0.05	0.5 mg/kg	98.3	62.0	118
EP068: trans-Chlordane	5103-74-2	0.05	mg/kg	<0.05	0.5 mg/kg	99.8	63.0	117
EP068: alpha-Endosulfan	959-98-8	0.05	mg/kg	<0.05	0.5 mg/kg	106	66.0	116
EP068: cis-Chlordane	5103-71-9	0.05	mg/kg	<0.05	0.5 mg/kg	98.6	64.0	116
EP068: Dieldrin	60-57-1	0.05	mg/kg	<0.05	0.5 mg/kg	101	66.0	116
EP068: 4.4`-DDE	72-55-9	0.05	mg/kg	<0.05	0.5 mg/kg	87.0	67.0	115
EP068: Endrin	72-20-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	67.0	123
EP068: beta-Endosulfan	33213-65-9	0.05	mg/kg	<0.05	0.5 mg/kg	101	69.0	115
EP068: 4.4`-DDD	72-54-8	0.05	mg/kg	<0.05	0.5 mg/kg	103	69.0	121
EP068: Endrin aldehyde	7421-93-4	0.05	mg/kg	<0.05	0.5 mg/kg	103	56.0	120
EP068: Endosulfan sulfate	1031-07-8	0.05	mg/kg	<0.05	0.5 mg/kg	99.6	62.0	124
EP068: 4.4`-DDT	50-29-3	0.2	mg/kg	<0.2	0.5 mg/kg	95.3	66.0	120
EP068: Endrin ketone	53494-70-5	0.05	mg/kg	<0.05	0.5 mg/kg	100	64.0	122
EP068: Methoxychlor	72-43-5	0.2	mg/kg	<0.2	0.5 mg/kg	95.8	54.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4068394)								

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4068394) - continued								
EP068: Dichlorvos	62-73-7	0.05	mg/kg	<0.05	0.5 mg/kg	107	59.0	119
EP068: Demeton-S-methyl	919-86-8	0.05	mg/kg	<0.05	0.5 mg/kg	97.1	62.0	128
EP068: Monocrotophos	6923-22-4	0.2	mg/kg	<0.2	0.5 mg/kg	75.0	54.0	126
EP068: Dimethoate	60-51-5	0.05	mg/kg	<0.05	0.5 mg/kg	92.5	67.0	119
EP068: Diazinon	333-41-5	0.05	mg/kg	<0.05	0.5 mg/kg	103	70.0	120
EP068: Chlorpyrifos-methyl	5598-13-0	0.05	mg/kg	<0.05	0.5 mg/kg	94.6	72.0	120
EP068: Parathion-methyl	298-00-0	0.2	mg/kg	<0.2	0.5 mg/kg	94.9	68.0	120
EP068: Malathion	121-75-5	0.05	mg/kg	<0.05	0.5 mg/kg	93.0	68.0	122
EP068: Fenthion	55-38-9	0.05	mg/kg	<0.05	0.5 mg/kg	97.2	69.0	117
EP068: Chlorpyrifos	2921-88-2	0.05	mg/kg	<0.05	0.5 mg/kg	94.4	76.0	118
EP068: Parathion	56-38-2	0.2	mg/kg	<0.2	0.5 mg/kg	98.0	64.0	122
EP068: Pirimphos-ethyl	23505-41-1	0.05	mg/kg	<0.05	0.5 mg/kg	93.6	70.0	116
EP068: Chlorfenvinphos	470-90-6	0.05	mg/kg	<0.05	0.5 mg/kg	99.5	69.0	121
EP068: Bromophos-ethyl	4824-78-6	0.05	mg/kg	<0.05	0.5 mg/kg	92.3	66.0	118
EP068: Fenamiphos	22224-92-6	0.05	mg/kg	<0.05	0.5 mg/kg	91.3	68.0	124
EP068: Prothiofos	34643-46-4	0.05	mg/kg	<0.05	0.5 mg/kg	99.0	62.0	112
EP068: Ethion	563-12-2	0.05	mg/kg	<0.05	0.5 mg/kg	95.1	68.0	120
EP068: Carbophenothion	786-19-6	0.05	mg/kg	<0.05	0.5 mg/kg	86.4	65.0	127
EP068: Azinphos Methyl	86-50-0	0.05	mg/kg	<0.05	0.5 mg/kg	95.6	41.0	123
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4068393)								
EP075(SIM): Naphthalene	91-20-3	0.5	mg/kg	<0.5	6 mg/kg	94.1	77.0	125
EP075(SIM): Acenaphthylene	208-96-8	0.5	mg/kg	<0.5	6 mg/kg	90.1	72.0	124
EP075(SIM): Acenaphthene	83-32-9	0.5	mg/kg	<0.5	6 mg/kg	97.1	73.0	127
EP075(SIM): Fluorene	86-73-7	0.5	mg/kg	<0.5	6 mg/kg	97.6	72.0	126
EP075(SIM): Phenanthrene	85-01-8	0.5	mg/kg	<0.5	6 mg/kg	95.1	75.0	127
EP075(SIM): Anthracene	120-12-7	0.5	mg/kg	<0.5	6 mg/kg	96.8	77.0	127
EP075(SIM): Fluoranthene	206-44-0	0.5	mg/kg	<0.5	6 mg/kg	73.7	73.0	127
EP075(SIM): Pyrene	129-00-0	0.5	mg/kg	<0.5	6 mg/kg	82.1	74.0	128
EP075(SIM): Benz(a)anthracene	56-55-3	0.5	mg/kg	<0.5	6 mg/kg	81.8	69.0	123
EP075(SIM): Chrysene	218-01-9	0.5	mg/kg	<0.5	6 mg/kg	89.7	75.0	127
EP075(SIM): Benzo(b+j)fluoranthene	205-99-2 205-82-3	0.5	mg/kg	<0.5	6 mg/kg	75.7	68.0	116
EP075(SIM): Benzo(k)fluoranthene	207-08-9	0.5	mg/kg	<0.5	6 mg/kg	81.5	74.0	126
EP075(SIM): Benzo(a)pyrene	50-32-8	0.5	mg/kg	<0.5	6 mg/kg	80.7	70.0	126
EP075(SIM): Indeno(1.2.3.cd)pyrene	193-39-5	0.5	mg/kg	<0.5	6 mg/kg	90.0	61.0	121
EP075(SIM): Dibenz(a.h)anthracene	53-70-3	0.5	mg/kg	<0.5	6 mg/kg	91.4	62.0	118
EP075(SIM): Benzo(g.h.i)perylene	191-24-2	0.5	mg/kg	<0.5	6 mg/kg	92.9	63.0	121
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4068392)								
EP071: C10 - C14 Fraction	----	50	mg/kg	<50	300 mg/kg	96.2	75.0	129

Sub-Matrix: **SOIL**

Method: Compound	CAS Number	LOR	Unit	Method Blank (MB) Report: Result	Laboratory Control Spike (LCS) Report: Spike Concentration	Spike Recovery (%): LCS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4068392) - continued								
EP071: C15 - C28 Fraction	----	100	mg/kg	<100	450 mg/kg	98.3	77.0	131
EP071: C29 - C36 Fraction	----	100	mg/kg	<100	300 mg/kg	97.5	71.0	129
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4073304)								
EP080: C6 - C9 Fraction	----	10	mg/kg	<10	26 mg/kg	99.1	68.4	128
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4068392)								
EP071: >C10 - C16 Fraction	----	50	mg/kg	<50	375 mg/kg	101	77.0	125
EP071: >C16 - C34 Fraction	----	100	mg/kg	<100	525 mg/kg	96.0	74.0	138
EP071: >C34 - C40 Fraction	----	100	mg/kg	<100	225 mg/kg	94.2	63.0	131
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4073304)								
EP080: C6 - C10 Fraction	C6_C10	10	mg/kg	<10	31 mg/kg	98.3	68.4	128
EP080: BTEXN (QCLot: 4073304)								
EP080: Benzene	71-43-2	0.2	mg/kg	<0.2	1 mg/kg	103	62.0	116
EP080: Toluene	108-88-3	0.5	mg/kg	<0.5	1 mg/kg	100	67.0	121
EP080: Ethylbenzene	100-41-4	0.5	mg/kg	<0.5	1 mg/kg	97.4	65.0	117
EP080: meta- & para-Xylene	108-38-3 106-42-3	0.5	mg/kg	<0.5	2 mg/kg	101	66.0	118
EP080: ortho-Xylene	95-47-6	0.5	mg/kg	<0.5	1 mg/kg	101	68.0	120
EP080: Naphthalene	91-20-3	1	mg/kg	<1	1 mg/kg	92.8	63.0	119

Matrix Spike (MS) Report

The quality control term Matrix Spike (MS) refers to an intralaboratory split sample spiked with a representative set of target analytes. The purpose of this QC parameter is to monitor potential matrix effects on analyte recoveries. Static Recovery Limits as per laboratory Data Quality Objectives (DQOs). Ideal recovery ranges stated may be waived in the event of sample matrix interference.

Sub-Matrix: **SOIL**

Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Matrix Spike (MS) Report: Spike Concentration	SpikeRecovery(%): MS	Acceptable Limits (%): Low	Acceptable Limits (%): High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 4074540)							
ES2145195-040	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	91.9	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	92.2	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	94.0	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	97.0	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	95.9	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	95.8	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	89.3	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 4074539)							
ES2145051-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	98.1	70.0	130
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4068395)							

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EP066: Polychlorinated Biphenyls (PCB) (QCLot: 4068395) - continued							
ES2144845-003	Anonymous	EP066: Total Polychlorinated biphenyls	----	1 mg/kg	98.0	70.0	130
EP068A: Organochlorine Pesticides (OC) (QCLot: 4068394)							
ES2144845-003	Anonymous	EP068: gamma-BHC	58-89-9	0.5 mg/kg	112	70.0	130
		EP068: Heptachlor	76-44-8	0.5 mg/kg	91.0	70.0	130
		EP068: Aldrin	309-00-2	0.5 mg/kg	101	70.0	130
		EP068: Dieldrin	60-57-1	0.5 mg/kg	97.9	70.0	130
		EP068: Endrin	72-20-8	2 mg/kg	88.5	70.0	130
		EP068: 4.4`-DDT	50-29-3	2 mg/kg	83.0	70.0	130
EP068B: Organophosphorus Pesticides (OP) (QCLot: 4068394)							
ES2144845-003	Anonymous	EP068: Diazinon	333-41-5	0.5 mg/kg	106	70.0	130
		EP068: Chlorpyrifos-methyl	5598-13-0	0.5 mg/kg	90.2	70.0	130
		EP068: Pirimphos-ethyl	23505-41-1	0.5 mg/kg	95.4	70.0	130
		EP068: Bromophos-ethyl	4824-78-6	0.5 mg/kg	87.4	70.0	130
		EP068: Prothiofos	34643-46-4	0.5 mg/kg	83.8	70.0	130
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons (QCLot: 4068393)							
ES2144845-003	Anonymous	EP075(SIM): Acenaphthene	83-32-9	10 mg/kg	95.9	70.0	130
		EP075(SIM): Pyrene	129-00-0	10 mg/kg	81.5	70.0	130
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4068392)							
ES2144845-003	Anonymous	EP071: C10 - C14 Fraction	----	480 mg/kg	110	73.0	137
		EP071: C15 - C28 Fraction	----	3100 mg/kg	115	53.0	131
		EP071: C29 - C36 Fraction	----	2060 mg/kg	121	52.0	132
EP080/071: Total Petroleum Hydrocarbons (QCLot: 4073304)							
ES2144640-004	Anonymous	EP080: C6 - C9 Fraction	----	32.5 mg/kg	108	70.0	130
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4068392)							
ES2144845-003	Anonymous	EP071: >C10 - C16 Fraction	----	860 mg/kg	112	73.0	137
		EP071: >C16 - C34 Fraction	----	4320 mg/kg	119	53.0	131
		EP071: >C34 - C40 Fraction	----	890 mg/kg	112	52.0	132
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions (QCLot: 4073304)							
ES2144640-004	Anonymous	EP080: C6 - C10 Fraction	C6_C10	37.5 mg/kg	107	70.0	130
EP080: BTEXN (QCLot: 4073304)							
ES2144640-004	Anonymous	EP080: Benzene	71-43-2	2.5 mg/kg	101	70.0	130
		EP080: Toluene	108-88-3	2.5 mg/kg	89.4	70.0	130
		EP080: Ethylbenzene	100-41-4	2.5 mg/kg	91.4	70.0	130
		EP080: meta- & para-Xylene	108-38-3 106-42-3	2.5 mg/kg	89.2	70.0	130
		EP080: ortho-Xylene	95-47-6	2.5 mg/kg	91.8	70.0	130

Sub-Matrix: **SOIL**

				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	*Sample ID*	*Method: Compound*	*CAS Number*	*Concentration*	*MS*	*Low*	*High*
EP080: BTEXN (QCLot: 4073304) - continued							
ES2144640-004	Anonymous	EP080: Naphthalene	91-20-3	2.5 mg/kg	88.2	70.0	130

ALS Environmental

QA/QC Compliance Assessment to assist with Quality Review

Work Order	: **EW2105304**	Page	: 1 of 5
Client	: **TETRA TECH COFFEY PTY LTD**	Laboratory	: Environmental Division NSW South Coast
Contact	: DELFA SARABIA	Telephone	: + 61 2 8784 8555
Project	: SYDGE295074 St George Dragons	Date Samples Received	: 09-Dec-2021
Site	:	Issue Date	: 18-Dec-2021
Sampler	: CAMERON PRENTICE	No. of samples received	: 1
Order number	: ----	No. of samples analysed	: 1

This report is automatically generated by the ALS LIMS through interpretation of the ALS Quality Control Report and several Quality Assurance parameters measured by ALS. This automated reporting highlights any non-conformances, facilitates faster and more accurate data validation and is designed to assist internal expert and external Auditor review. Many components of this report contribute to the overall DQO assessment and reporting for guideline compliance.

Brief method summaries and references are also provided to assist in traceability.

Summary of Outliers

Outliers : Quality Control Samples

This report highlights outliers flagged in the Quality Control (QC) Report.

- **NO Method Blank value outliers occur.**
- **NO Duplicate outliers occur.**
- **NO Laboratory Control outliers occur.**
- **NO Matrix Spike outliers occur.**
- **For all regular sample matrices, NO surrogate recovery outliers occur.**

Outliers : Analysis Holding Time Compliance

- **NO Analysis Holding Time Outliers exist.**

Outliers : Frequency of Quality Control Samples

- **Quality Control Sample Frequency Outliers exist - please see following pages for full details.**

Outliers : Frequency of Quality Control Samples

Matrix: **SOIL**

Quality Control Sample Type	Count		Rate (%)		Quality Control Specification
Method	QC	Regular	Actual	Expected	
Laboratory Duplicates (DUP)					
Moisture Content	1	12	8.33	10.00	NEPM 2013 B3 & ALS QC Standard

Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results.

This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein.

Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters.

Holding times for ***VOC in soils*** vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / *Container* / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055)							
Trip 1	**08-Dec-2021**	**----**	----	----	**14-Dec-2021**	22-Dec-2021	✓
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	06-Jun-2022	✓	**14-Dec-2021**	06-Jun-2022	✓
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	05-Jan-2022	✓	**14-Dec-2021**	05-Jan-2022	✓
EP066: Polychlorinated Biphenyls (PCB)							
Soil Glass Jar - Unpreserved (EP066)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓
EP068A: Organochlorine Pesticides (OC)							
Soil Glass Jar - Unpreserved (EP068)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓
EP068B: Organophosphorus Pesticides (OP)							
Soil Glass Jar - Unpreserved (EP068)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓
EP075(SIM)B: Polynuclear Aromatic Hydrocarbons							
Soil Glass Jar - Unpreserved (EP075(SIM))							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓
EP080/071: Total Petroleum Hydrocarbons							
Soil Glass Jar - Unpreserved (EP080)							
Trip 1	**08-Dec-2021**	**13-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	22-Dec-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓

Matrix: **SOIL**

Evaluation: × = Holding time breach ; ✓ = Within holding time.

Method / Container / Client Sample ID(s)	Sample Date	Extraction / Preparation			Analysis		
		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EP080/071: Total Recoverable Hydrocarbons - NEPM 2013 Fractions							
Soil Glass Jar - Unpreserved (EP080)							
Trip 1	**08-Dec-2021**	**13-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	22-Dec-2021	✓
Soil Glass Jar - Unpreserved (EP071)							
Trip 1	**08-Dec-2021**	**14-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	23-Jan-2022	✓
EP080: BTEXN							
Soil Glass Jar - Unpreserved (EP080)							
Trip 1	**08-Dec-2021**	**13-Dec-2021**	22-Dec-2021	✓	**15-Dec-2021**	22-Dec-2021	✓

Quality Control Parameter Frequency Compliance

The following report summarises the frequency of laboratory QC samples analysed within the analytical lot(s) in which the submitted sample(s) was(were) processed. Actual rate should be greater than or equal to the expected rate. A listing of breaches is provided in the Summary of Outliers.

Matrix: **SOIL**

Evaluation: × = Quality Control frequency not within specification ; ✓ = Quality Control frequency within specification.

Quality Control Sample Type		Count		Rate (%)			Quality Control Specification
Analytical Methods	*Method*	*QC*	*Regular*	***Actual***	***Expected***	*Evaluation*	
Laboratory Duplicates (DUP)							
Moisture Content	EA055	1	12	**8.33**	**10.00**	×	NEPM 2013 B3 & ALS QC Standard
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	8	**12.50**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	15	**13.33**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	10	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	2	20	**10.00**	**10.00**	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
PAH/Phenols (SIM)	EP075(SIM)	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Pesticides by GCMS	EP068	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Polychlorinated Biphenyls (PCB)	EP066	1	8	**12.50**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	1	15	**6.67**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	10	**10.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH - Semivolatile Fraction	EP071	1	9	**11.11**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard
TRH Volatiles/BTEX	EP080	1	20	**5.00**	**5.00**	✓	NEPM 2013 B3 & ALS QC Standard

Brief Method Summaries

The analytical procedures used by the Environmental Division have been developed from established internationally recognized procedures such as those published by the US EPA, APHA, AS and NEPM. In house developed procedures are employed in the absence of documented standards or by client request. The following report provides brief descriptions of the analytical procedures employed for results reported in the Certificate of Analysis. Sources from which ALS methods have been developed are provided within the Method Descriptions.

Analytical Methods	Method	Matrix	Method Descriptions
Moisture Content	EA055	SOIL	In house: A gravimetric procedure based on weight loss over a 12 hour drying period at 105-110 degrees C. This method is compliant with NEPM Schedule B(3).
Total Metals by ICP-AES	EG005T	SOIL	In house: Referenced to APHA 3120; USEPA SW 846 - 6010. Metals are determined following an appropriate acid digestion of the soil. The ICPAES technique ionises samples in a plasma, emitting a characteristic spectrum based on metals present. Intensities at selected wavelengths are compared against those of matrix matched standards. This method is compliant with NEPM Schedule B(3)
Total Mercury by FIMS	EG035T	SOIL	In house: Referenced to APHA 3112 Hg - B (Flow-injection (SnCl2) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl2 which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
Polychlorinated Biphenyls (PCB)	EP066	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3).
Pesticides by GCMS	EP068	SOIL	In house: Referenced to USEPA SW 846 - 8270 Extracts are analysed by Capillary GC/MS and quantification is by comparison against an established 5 point calibration curve. This technique is compliant with NEPM Schedule B(3).
TRH - Semivolatile Fraction	EP071	SOIL	In house: Referenced to USEPA SW 846 - 8015 Sample extracts are analysed by Capillary GC/FID and quantified against alkane standards over the range C10 - C40. Compliant with NEPM Schedule B(3).
PAH/Phenols (SIM)	EP075(SIM)	SOIL	In house: Referenced to USEPA SW 846 - 8270. Extracts are analysed by Capillary GC/MS in Selective Ion Mode (SIM) and quantification is by comparison against an established 5 point calibration curve. This method is compliant with NEPM Schedule B(3)
TRH Volatiles/BTEX	EP080	SOIL	In house: Referenced to USEPA SW 846 - 8260. Extracts are analysed by Purge and Trap, Capillary GC/MS. Quantification is by comparison against an established 5 point calibration curve. Compliant with NEPM Schedule B(3) amended.

Preparation Methods	Method	Matrix	Method Descriptions
Hot Block Digest for metals in soils sediments and sludges	EN69	SOIL	In house: Referenced to USEPA 200.2. Hot Block Acid Digestion 1.0g of sample is heated with Nitric and Hydrochloric acids, then cooled. Peroxide is added and samples heated and cooled again before being filtered and bulked to volume for analysis. Digest is appropriate for determination of selected metals in sludge, sediments, and soils. This method is compliant with NEPM Schedule B(3).
Methanolic Extraction of Soils for Purge and Trap	ORG16	SOIL	In house: Referenced to USEPA SW 846 - 5030A. 5g of solid is shaken with surrogate and 10mL methanol prior to analysis by Purge and Trap - GC/MS.
Tumbler Extraction of Solids	ORG17	SOIL	In house: Mechanical agitation (tumbler). 10g of sample, Na2SO4 and surrogate are extracted with 30mL 1:1 DCM/Acetone by end over end tumble. The solvent is decanted, dehydrated and concentrated (by KD) to the desired volume for analysis.

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Loche Mobile: Email: Matthew.loche @tetratech.com
Invoices to: general.admin@Coffey.Com Phone: Email: delta.sarabia @tetratech.com

Project No: SYDGE295074 Task No:
Project Name: St George Dragons Laboratory: Eurofins
Sampler's Name: Cameron Prentice Project Manager: Delta Sarabia
Quote number (if different to current quoted prices):
Special Instructions:

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Analysis Request Section: OTCH	NOTES
	CPT11_0.1-0.2	8/12/21	Jar,b	Soil		Itbld	✓	
	" " _0.4-0.5		Jar,b				✓	
	" " _1.1-1.2		J				✓	J = glass Jar
	CPT10_0.1-0.2		J,b				✓	b = Asbestos bag
	" " _0.4-0.5		J				✓	
	" " _1.1-1.2		J				✓	
	CPT8_0.1-0.2		J,b				✓	
	" " _0.4-0.5		J				✓	
	" " _1.1-1.2		J				✓	
	CPT7_0.1-0.2		J,b				✓	
	" " _0.4-0.5		J				✓	
	" " _1.1-1.2		J				✓	
	CPT1_0.1-0.2		J,b				✓	
	" " _0.4-0.5		J				✓	
	" " _1.1-1.2		J				✓	
	CPT2_0.1-0.2	↓	J,b	↓		↓	✓	

Environmental Division Wollongong
Work Order Reference
EW2105304

Telephone : 02 42263125

RELINQUISHED BY

Name: Cameron Prentice Date: 8/12/21
Coffey Time: 16:30

Name: Date:
Company: Time:

RECEIVED BY

Name: Date: 9/12/21
Company: Time: 4:30PM

Name: Date: 9.12.21
Company: ALS Time: 17:15

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 17.5°C

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office: Chatswood
Report Results to: Matthew Locke Mobile: Email: matthew.locke @tetratech.com
Invoices to: general.admin@coffey.com Phone: Email: delfa.sarabia @tetratech.com

Project No: SYDGE295047 Task No:
Project Name: St George Dragons Laboratory: Eurofins
Sampler's Name: Cameron Prentice Project Manager: Delfa Sarabia
Quote number (if different to current quoted prices):
Special Instructions:

Analysis Request Section

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Hold	NOTES
	CPT2 _0.4-0.5	8/12/21		Soil	J	Hold	X	
	" " _1.1-1.2				J		/	
	CPT3 _0.1-0.2				J,b		/	
	" " _0.4-0.5				J		/	J = glass jar
	" " _1.1-1.2				J		/	b = Asbestos bag
	CPT5 _0.1-0.2				J,b		/	
	CPT5 _0.4-0.5				J		/	
	" " _1.1-1.2				J		/	
	CPT6 _0.1-0.2				J,b		/	
	" " _0.4-0.5				J		/	
	" " _1.1-1.2				J		/	
	Dup1				J		/	
(1)	Trip1				J		/	
	Trip spike						/	
	Trip blank						/	

RELINQUISHED BY

Name: Cameron Prentice Date: 8/12/21 →
Coffey Time:

Name: Date: →
Company: Time:

RECEIVED BY

Name: Nham Date: 9.12.21
Company: ALS Time: 12:15

Name: Date:
Company: Time:

Sample Receipt Advice: (Lab Use Only)

All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☑
Lab. Ref/Batch No. 17.5°C

*Container Type & Preservation Codes: **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETR
COFFI

Project No: SYDGE
Project Name: St G
Sampler's Name: Co
Quote number (if differe
Special Instructions:

Consigning Office: Charlswood
Report Results to: Matthew Loche Mobile: Email: Matthew.Loche @tetratech.com
Invoices to: gereed.admin@Coffey.com Phone: Email: Delfa.Sarabia @tetratech.com
Task No:
Laboratory: Eurofins
Project Manager: Delfa Sarabia

Analysis Request Section

Eurofins Lab Batch Ref	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	HOLD	SUITE M8 (METALS 04)	SUITE B4 (TRH/BTEX)	SUITE B15 (OCP/OPP/PCB)	ASBESTOS (DETECT)	CEC	pH	TOC	NOTES
CPT	9/12/21	Jar, b	Soil		STANDARD TAT		/	/	/	/				J = glass Jar
		Jar, b												b = Asbestos bag
CPT		J, b					/	/	/	/				
		J												
CPT		J, b					/	/	/	/				
		J												
CPT		J, b					/	/		/				
		J												
CPT		J, b					/	/	/	/				
		J												
CPT		J, b					/	/		/				
		J												
		J, b					/	/		/				
		J					/	/						
		J, b					/	/						

RECEIVED BY

9/12/21 16:30 →	Name: MLoud	Date: 9.12.21	
	Company: ALS	Time: 13:15	
→	Name:	Date:	
	Company:	Time:	

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved In Good Condition ☐
All Documentation is In Proper Order ☐
Samples Received Properly Chilled ☑ 17.5°C
Lab. Ref/Batch No.

Name: Comer
Company: Coffey

Name:
Company:

*Container Type & Pres
Preserved, I - Ice, ST - Sc

lass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid
ervative

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

Consigning Office: Chatswood
Report Results to: Matthew Locke
Invoice to: [illegible]
Task No:
Laboratory: Eurofins
Project Manager: Delta Sarabia

Mobile:
Mobile:
Email: [illegible]
Email: [illegible]

Analysis Request Section

Sample Date	Time	Matrix (Soil etc)	Container Type & Preservative*	TAT (Specify)	Hold	Suite M8	Suite B4	Suite B15	Asbestos (AC detect)	CEC	pH	TOC	Volatile PAH / BTEX	NOTES
8/12/21		Soil	J											
↓		↓	J											
			J,b											
			J											
			J	STANDARD TAT										J = glass jar
			J,b											b = Asbestos bag
			J											
			J											
			J,b											
			J											
			J											
			J											
			J											* SEND TO ALS *

Relinquished		Received by	
Date: 8/12/21	→	Name: [illegible]	Date: 9.12.21
Time:		Company: ALS	Time: 12:15
Date:	→	Name:	Date:
Time:		Company:	Time:

Sample Receipt Advice: (Lab Use Only)
All Samples Recieved in Good Condition ☐
All Documentation is in Proper Order ☐
Samples Received Properly Chilled ☑ 17.5°C
Lab. Ref/Batch No.

G - Glass Bottle, J - Glass Jar, V - Vial, Z - Ziplock bag, N - Nitric Acid Preserved, C - Hydrochloric Acid Preserved, S - Sulphuric Acid Preservative

* SUITE M8 - METALS 8
* SUITE B4 - TRH / BTEX / PAH
* SUITE B15 - OCP / OPP / PCB

Chain of custody
Issue: 30 July 2020
UNCONTROLLED WH[illegible]

CHAIN-OF-CUSTODY AND ANALYSIS REQUEST

TETRA TECH COFFEY

Consigning Office:	Chatswood				
Report Results to:	Matthew Locke	Mobile:		Email:	matthew.locke@tetratech.com
Invoices to:	general.admin@coffey.com	Phone:		Email:	delfa.sarabia@tetratech.com

Project No:	SYDGE295047	Task No:	
Project Name:	St George	Laboratory:	Eurofins
Sampler's Name:	Cameron Prentice	Project Manager:	Delfa Sarabia
Quote number (If different to current quoted prices):			
Special Instructions:			

Eurofins Lab Batch Ref	Sample ID	Sample Date	Time	Matrix (Soil...etc)	Container Type & Preservative*	T-A-T (specify)	Suite M8 (metals 8)	Suite B4 (TRH/BTEX/PAH)	Suite B15 (OCP/OPP/PCB)	Asbestos (Detect)	CEC	pH	TOC	PFAS		ASS Screening	SPOCAS			NOTES
	BH6	27/1/22		Water		Hold														Container Types:
	BH7																			P= PFAS Jar
	BH8																			J= Glass jar
	BH9																			A= Asbestos bag
	BH10																			ASS= Acid Sulfate bag
	RP-1																			
	Dup-1																			
	Trip-1																			
	Trip Spike																			
	Trip Blank																			

RELINQUISHED BY		RECEIVED BY	
Name: Cameron Prentice	Date: 27/1/22 →	Name: Lily Cains	Date: 28/1/22
Coffey	Time:	Company: Eurofins	Time: 10:10 am
Name:	Date: →	Name:	Date:
Company:	Time:	Company:	Time:

Sample Receipt Advice: (Lab Use Only)

- All Samples Recieved in Good Condition ☐
- All Documentation is in Proper Order ☐
- Samples Received Properly Chilled ☐
- Lab. Ref/Batch No. 9.3°C

***Container Type & Preservation Codes:** **P** - Plastic, **G**- Glass Bottle, **J** - Glass Jar, **V**- Vial, **Z** - Ziplock bag, **N** - Nitric Acid Preserved, **C** - Hydrochloric Acid Preserved, **S** - Sulphuric Acid Preserved, **I** - Ice, **ST** - Sodium Thiosulfate, **NP** - No Preservative

Report: 858497

Hannah Mawbey

From: Ursula Long
Sent: Friday, 28 January 2022 11:43 AM
To: Hannah Mawbey
Subject: FW: COC St George

Follow Up Flag: Follow up
Flag Status: Flagged

Did you get this one?

Kind regards,

Ursula Long
Analytical Services Manager

Eurofins Environment Testing Australia Pty Ltd
Unit F3, Parkview Building
16 Mars Road
LANE COVE WEST NSW 2066
AUSTRALIA
Mobile: +61 428 845 495
Email : UrsulaLong@eurofins.com
Website: www.eurofins.com.au/environmental-testing

For sample receipt enquiries (eg. SRAs, changes to analysis) please contact EnvirosampleNSW@eurofins.com or 02 9900 8421 (7am – 12am).
For despatch enquiries (eg. courier bookings, bottle orders) please contact AU04_Despatch_SYD@eurofins.com or 0488 400 929 (8am – 4pm).

From: Locke, Matthew <Matthew.Locke@coffey.com>
Sent: Friday, 28 January 2022 10:10 AM
To: #AU04_EnvirosampleWOLL <EnvirosampleWOLL@eurofins.com>
Cc: Ursula Long <UrsulaLong@eurofins.com>; Prentice, Cameron <CAMERON.PRENTICE@coffey.com>
Subject: FW: COC St George

EXTERNAL EMAIL*

Dear Eurofins
My colleague, Cameron Prentice, dropped off samples at your Wollongong laboratory yesterday (pic of COC provided below).
Can you please conduct the following analysis on a standard turnaround.

Sample ID	Suite M8 (Metals 8)	Suite B4 (TRH/PAH/BTEX)	PFAS (28 Compounds)	Volatile TRH + BTEX	Comments
BH6	X	X	X		
BH7	X	X	X		
BH8	X	X	X		
BH9	X	X	X		
BH10	X	X	X		
RB-1	X	X	X		
DUP-1	X	X	X		
TRIP-1	X	X	X		Please send to ALS for analysis.
Trip Spike				X	
Trip Blank				X	

Please let me know if you have any comments on the above. Please issue sample receipt notification.

Regards
Matt

From: Prentice, Cameron <CAMERON.PRENTICE@coffey.com>
Sent: Thursday, 27 January 2022 3:58 PM
To: Locke, Matthew <Matthew.Locke@coffey.com>
Subject: COC

Hi Matt

eurofins | Environment Testing

www.eurofins.com.au EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

Melbourne
6 Monterey Road
Dandenong South VIC 3175
Phone : +61 3 8564 5000
NATA # 1261 Site # 1254

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

Newcastle
4/52 Industrial Drive
Mayfield East NSW 2304
PO Box 60 Wickham 2293
Phone : +61 2 4968 8448
NATA # 1261 Site # 25079

Eurofins ARL Pty Ltd
ABN: 91 05 0159 898

Perth
46-48 Banksia Road
Welshpool WA 6106
Phone : +61 8 6253 4444
NATA # 2377 Site # 2370

Eurofins Environment Testing NZ Limited
NZBN: 9429046024954

Auckland
35 O'Rorke Road
Penrose, Auckland 1061
Phone : +64 9 526 45 51
IANZ # 1327

Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Sample Receipt Advice

Company name:	Coffey Geotechnics Pty Ltd Chatswood
Contact name:	Matthew Locke
Project name:	ST GEORGE
Project ID:	SYDGE295047
Turnaround time:	5 Day
Date/Time received	Jan 28, 2022 10:10 AM
Eurofins reference	858497

Sample Information

✓	A detailed list of analytes logged into our LIMS, is included in the attached summary table.
✓	Sample Temperature of chilled sample on the batch as recorded by Eurofins Sample Receipt : 9.3 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.
✓	Split sample sent to requested external lab.
✗	Some samples have been subcontracted.
N/A	Custody Seals intact (if used).

Notes

Sample TRIP-1 sent to ALS for analysis as requested.

Contact

If you have any questions with respect to these samples, please contact your Analytical Services Manager:

Ursula Long on phone : or by email: UrsulaLong@eurofins.com

Results will be delivered electronically via email to Matthew Locke - Matthew_Locke@coffey.com.

Note: A copy of these results will also be delivered to the general Coffey Geotechnics Pty Ltd Chatswood email address.

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 858497
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 28, 2022 10:10 AM
Due: Feb 4, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X
Brisbane Laboratory - NATA # 1261 Site # 20794								X	
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	BH6	Jan 27, 2022		Water	W22-Ja33477	X		X	
2	BH7	Jan 27, 2022		Water	W22-Ja33478	X		X	
3	BH8	Jan 27, 2022		Water	W22-Ja33479	X		X	
4	BH9	Jan 27, 2022		Water	W22-Ja33480	X		X	
5	BH10	Jan 27, 2022		Water	W22-Ja33481	X		X	
6	RB-1	Jan 27, 2022		Water	W22-Ja33482	X		X	
7	DUP-1	Jan 27, 2022		Water	W22-Ja33483	X		X	
8	TRIP SPIKE	Jan 27, 2022		Water	W22-Ja33484				X
9	TRIP BLANK	Jan 27, 2022		Water	W22-Ja33485		X		

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web: www.eurofins.com.au
email: EnviroSales@eurofins.com

Eurofins Environment Testing Australia Pty Ltd
ABN: 50 005 085 521

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Christchurch
43 Detroit Drive
Rolleston, Christchurch 7675
Phone : 0800 856 450
IANZ # 1290

Company Name: Coffey Geotechnics Pty Ltd Chatswood
Address: Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
Report #: 858497
Phone: +61 2 9406 1000
Fax: +61 2 9406 1002

Received: Jan 28, 2022 10:10 AM
Due: Feb 4, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254				
Sydney Laboratory - NATA # 1261 Site # 18217	X	X		X
Brisbane Laboratory - NATA # 1261 Site # 20794			X	
Mayfield Laboratory - NATA # 1261 Site # 25079				
Perth Laboratory - NATA # 2377 Site # 2370				
External Laboratory				
Test Counts	7	1	7	1

Coffey Geotechnics Pty Ltd Chatswood
Level 18, Tower B, Citadel Tower 799 Pacific Highway
Chatswood
NSW 2067

NATA Accredited
Accreditation Number 1261
Site Number 20794

Accredited for compliance with ISO/IEC 17025 – Testing
NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration, inspection, proficiency testing scheme providers and reference materials producers reports and certificates.

Attention: **Matthew Locke**

Report **858497-W**
Project name ST GEORGE
Project ID SYDGE295047
Received Date Jan 28, 2022

Client Sample ID			**BH6**	**BH7**	**BH8**	**BH9**
Sample Matrix			**Water**	**Water**	**Water**	**Water**
Eurofins Sample No.			**W22-Ja33477**	**W22-Ja33478**	**W22-Ja33479**	**W22-Ja33480**
Date Sampled			**Jan 27, 2022**	**Jan 27, 2022**	**Jan 27, 2022**	**Jan 27, 2022**
Test/Reference	LOR	Unit				
Total Recoverable Hydrocarbons - 1999 NEPM Fractions						
TRH C6-C9	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C10-C14	0.05	mg/L	< 0.05	< 0.05	0.08	< 0.05
TRH C15-C28	0.1	mg/L	0.8	0.2	0.4	< 0.1
TRH C29-C36	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH C10-C36 (Total)	0.1	mg/L	0.8	0.2	0.48	< 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	%	89	101	94	105
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	0.08	< 0.05
TRH C6-C10	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02	< 0.02	< 0.02	< 0.02
Polycyclic Aromatic Hydrocarbons						
Acenaphthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Benz(a)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(a)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(b&j)fluoranthene[N07]	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(g.h.i)perylene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Benzo(k)fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.001

Client Sample ID			BH6	BH7	BH8	BH9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			W22-Ja33477	W22-Ja33478	W22-Ja33479	W22-Ja33480
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Polycyclic Aromatic Hydrocarbons						
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.001	< 0.002
2-Fluorobiphenyl (surr.)	1	%	81	50	70	INT
p-Terphenyl-d14 (surr.)	1	%	74	52	80	50
Total Recoverable Hydrocarbons - 2013 NEPM Fractions						
TRH >C10-C16	0.05	mg/L	< 0.05	< 0.05	0.08	< 0.05
TRH >C16-C34	0.1	mg/L	0.9	0.3	0.5	< 0.1
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	< 0.1
TRH >C10-C40 (total)*	0.1	mg/L	0.9	0.3	0.58	< 0.1
Metals M8						
Arsenic	0.001	mg/L	0.002	0.012	0.002	0.004
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	< 0.0002
Chromium	0.001	mg/L	0.005	0.041	0.002	0.015
Copper	0.001	mg/L	0.011	0.042	0.003	0.014
Lead	0.001	mg/L	0.003	0.021	< 0.001	0.006
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	< 0.0001
Nickel	0.001	mg/L	< 0.001	0.035	0.007	0.047
Zinc	0.005	mg/L	0.011	0.075	0.011	0.17
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C4-PFBA (surr.)	1	%	115	48	30	98
13C5-PFPeA (surr.)	1	%	99	20	29	68
13C5-PFHxA (surr.)	1	%	144	114	46	84
13C4-PFHpA (surr.)	1	%	138	72	44	83
13C8-PFOA (surr.)	1	%	134	106	68	74
13C5-PFNA (surr.)	1	%	128	118	62	89
13C6-PFDA (surr.)	1	%	91	130	67	88
13C2-PFUnDA (surr.)	1	%	73	107	67	65
13C2-PFDoDA (surr.)	1	%	66	67	58	86
13C2-PFTeDA (surr.)	1	%	50	45	31	55
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05

Client Sample ID			BH6	BH7	BH8	BH9
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			W22-Ja33477	W22-Ja33478	W22-Ja33479	W22-Ja33480
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonamido substances						
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
13C8-FOSA (surr.)	1	%	56	81	51	74
D3-N-MeFOSA (surr.)	1	%	73	54	44	73
D5-N-EtFOSA (surr.)	1	%	72	51	42	55
D7-N-MeFOSE (surr.)	1	%	66	43	30	108
D9-N-EtFOSE (surr.)	1	%	84	53	37	96
D5-N-EtFOSAA (surr.)	1	%	68	119	50	60
D3-N-MeFOSAA (surr.)	1	%	75	98	49	56
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C3-PFBS (surr.)	1	%	86	153	68	90
18O2-PFHxS (surr.)	1	%	77	114	60	97
13C8-PFOS (surr.)	1	%	75	118	70	86
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
13C2-4:2 FTSA (surr.)	1	%	183	INT	83	50
13C2-6:2 FTSA (surr.)	1	%	INT	INT	124	92
13C2-8:2 FTSA (surr.)	1	%	INT	125	62	92
13C2-10:2 FTSA (surr.)	1	%	106	69	41	65
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	< 0.01
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	< 0.05
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	< 0.1

Client Sample ID			BH10	RB-1	DUP-1	TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			W22-Ja33481	W22-Ja33482	W22-Ja33483	W22-Ja33484
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
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-C36 (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	%	95	95	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	< 0.05	< 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	< 0.002	-
Acenaphthylene	0.001	mg/L	< 0.001	< 0.001	< 0.002	-
Anthracene	0.001	mg/L	< 0.001	< 0.001	< 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	-
Chrysene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Dibenz(a.h)anthracene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluoranthene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Fluorene	0.001	mg/L	< 0.001	< 0.001	< 0.002	-
Indeno(1.2.3-cd)pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Naphthalene	0.001	mg/L	< 0.001	< 0.001	< 0.002	-
Phenanthrene	0.001	mg/L	< 0.001	< 0.001	< 0.002	-
Pyrene	0.001	mg/L	< 0.001	< 0.001	< 0.001	-
Total PAH*	0.001	mg/L	< 0.001	< 0.001	< 0.002	-
2-Fluorobiphenyl (surr.)	1	%	78	72	INT	-
p-Terphenyl-d14 (surr.)	1	%	67	72	77	-
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	0.2	-
TRH >C34-C40	0.1	mg/L	< 0.1	< 0.1	< 0.1	-
TRH >C10-C40 (total)*	0.1	mg/L	< 0.1	< 0.1	0.2	-
Metals M8						
Arsenic	0.001	mg/L	0.011	< 0.001	0.003	-
Cadmium	0.0002	mg/L	< 0.0002	< 0.0002	< 0.0002	-
Chromium	0.001	mg/L	0.046	< 0.001	0.011	-
Copper	0.001	mg/L	0.087	< 0.001	0.010	-
Lead	0.001	mg/L	0.019	< 0.001	0.005	-

Client Sample ID			BH10	RB-1	DUP-1	TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			W22-Ja33481	W22-Ja33482	W22-Ja33483	W22-Ja33484
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Metals M8						
Mercury	0.0001	mg/L	< 0.0001	< 0.0001	< 0.0001	-
Nickel	0.001	mg/L	0.059	< 0.001	0.040	-
Zinc	0.005	mg/L	0.11	0.008	0.14	-
Perfluoroalkyl carboxylic acids (PFCAs)						
Perfluorobutanoic acid (PFBA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
Perfluoropentanoic acid (PFPeA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorohexanoic acid (PFHxA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluoroheptanoic acid (PFHpA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorooctanoic acid (PFOA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorononanoic acid (PFNA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorodecanoic acid (PFDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluoroundecanoic acid (PFUnDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorododecanoic acid (PFDoDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorotridecanoic acid (PFTrDA)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorotetradecanoic acid (PFTeDA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
13C4-PFBA (surr.)	1	%	39	178	131	-
13C5-PFPeA (surr.)	1	%	53	148	81	-
13C5-PFHxA (surr.)	1	%	157	125	61	-
13C4-PFHpA (surr.)	1	%	87	88	83	-
13C8-PFOA (surr.)	1	%	95	73	86	-
13C5-PFNA (surr.)	1	%	96	76	88	-
13C6-PFDA (surr.)	1	%	106	103	108	-
13C2-PFUnDA (surr.)	1	%	84	100	71	-
13C2-PFDoDA (surr.)	1	%	59	99	37	-
13C2-PFTeDA (surr.)	1	%	58	63	18	-
Perfluoroalkyl sulfonamido substances						
Perfluorooctane sulfonamide (FOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
13C8-FOSA (surr.)	1	%	62	59	70	-
D3-N-MeFOSA (surr.)	1	%	59	94	60	-
D5-N-EtFOSA (surr.)	1	%	48	95	54	-
D7-N-MeFOSE (surr.)	1	%	45	88	48	-
D9-N-EtFOSE (surr.)	1	%	50	94	42	-
D5-N-EtFOSAA (surr.)	1	%	85	113	54	-
D3-N-MeFOSAA (surr.)	1	%	67	92	47	-
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluorobutanesulfonic acid (PFBS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorononanesulfonic acid (PFNS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluoropropanesulfonic acid (PFPrS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluoropentanesulfonic acid (PFPeS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorohexanesulfonic acid (PFHxS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-

Client Sample ID			BH10	RB-1	DUP-1	TRIP SPIKE
Sample Matrix			Water	Water	Water	Water
Eurofins Sample No.			W22-Ja33481	W22-Ja33482	W22-Ja33483	W22-Ja33484
Date Sampled			Jan 27, 2022	Jan 27, 2022	Jan 27, 2022	Jan 27, 2022
Test/Reference	LOR	Unit				
Perfluoroalkyl sulfonic acids (PFSAs)						
Perfluoroheptanesulfonic acid (PFHpS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorooctanesulfonic acid (PFOS)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Perfluorodecanesulfonic acid (PFDS)[N15]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
13C3-PFBS (surr.)	1	%	160	124	112	-
18O2-PFHxS (surr.)	1	%	106	97	96	-
13C8-PFOS (surr.)	1	%	99	91	105	-
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)						
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)[N11]	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)[N11]	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
13C2-4:2 FTSA (surr.)	1	%	97	124	126	-
13C2-6:2 FTSA (surr.)	1	%	125	54	91	-
13C2-8:2 FTSA (surr.)	1	%	75	64	65	-
13C2-10:2 FTSA (surr.)	1	%	49	60	40	-
PFASs Summations						
Sum (PFHxS + PFOS)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Sum of US EPA PFAS (PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Sum of enHealth PFAS (PFHxS + PFOS + PFOA)*	0.01	ug/L	< 0.01	< 0.01	< 0.01	-
Sum of WA DWER PFAS (n=10)*	0.05	ug/L	< 0.05	< 0.05	< 0.05	-
Sum of PFASs (n=30)*	0.1	ug/L	< 0.1	< 0.1	< 0.1	-
TRH C6-C10	1	%	-	-	-	70
Total Recoverable Hydrocarbons						
Naphthalene	1	%	-	-	-	110
TRH C6-C9	1	%	-	-	-	73
BTEX						
Benzene	1	%	-	-	-	110
Ethylbenzene	1	%	-	-	-	110
m&p-Xylenes	1	%	-	-	-	120
o-Xylene	1	%	-	-	-	100
Toluene	1	%	-	-	-	110
Xylenes - Total	1	%	-	-	-	110
4-Bromofluorobenzene (surr.)	1	%	-	-	-	93

Client Sample ID			TRIP BLANK
Sample Matrix			Water
Eurofins Sample No.			W22-Ja33485
Date Sampled			Jan 27, 2022
Test/Reference	LOR	Unit	
Total Recoverable Hydrocarbons - 1999 NEPM Fractions			
TRH C6-C9	0.02	mg/L	< 0.02

Client Sample ID			TRIP BLANK
Sample Matrix			**Water**
Eurofins Sample No.			**W22-Ja33485**
Date Sampled			**Jan 27, 2022**
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
Naphthalene[N02]	0.01	mg/L	< 0.01
Total Recoverable Hydrocarbons			
TRH C6-C10	0.02	mg/L	< 0.02
TRH C6-C10 less BTEX (F1)[N04]	0.02	mg/L	< 0.02

Sample History

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

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 03, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
BTEX	Sydney	Feb 01, 2022	14 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 01, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Total Recoverable Hydrocarbons	Sydney	Feb 01, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Polycyclic Aromatic Hydrocarbons	Sydney	Feb 03, 2022	7 Days
- Method: LTM-ORG-2130 PAH and Phenols in Soil and Water			
Total Recoverable Hydrocarbons - 2013 NEPM Fractions	Sydney	Feb 03, 2022	7 Days
- Method: LTM-ORG-2010 TRH C6-C40			
Metals M8	Sydney	Feb 02, 2022	28 Days
- Method: LTM-MET-3040 Metals in Waters, Soils & Sediments by ICP-MS			
Per- and Polyfluoroalkyl Substances (PFASs)			
Perfluoroalkyl carboxylic acids (PFCAs)	Brisbane	Feb 01, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonamido substances	Brisbane	Feb 01, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
Perfluoroalkyl sulfonic acids (PFSAs)	Brisbane	Feb 01, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)	Brisbane	Feb 01, 2022	28 Days
- Method: LTM-ORG-2100 Per- and Polyfluoroalkyl Substances (PFAS)			

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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
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Received: Jan 28, 2022 10:10 AM
Due: Feb 4, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail						Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254									
Sydney Laboratory - NATA # 1261 Site # 18217						X	X		X
Brisbane Laboratory - NATA # 1261 Site # 20794								X	
Mayfield Laboratory - NATA # 1261 Site # 25079									
Perth Laboratory - NATA # 2377 Site # 2370									
External Laboratory									
No	**Sample ID**	**Sample Date**	**Sampling Time**	**Matrix**	**LAB ID**				
1	BH6	Jan 27, 2022		Water	W22-Ja33477	X		X	
2	BH7	Jan 27, 2022		Water	W22-Ja33478	X		X	
3	BH8	Jan 27, 2022		Water	W22-Ja33479	X		X	
4	BH9	Jan 27, 2022		Water	W22-Ja33480	X		X	
5	BH10	Jan 27, 2022		Water	W22-Ja33481	X		X	
6	RB-1	Jan 27, 2022		Water	W22-Ja33482	X		X	
7	DUP-1	Jan 27, 2022		Water	W22-Ja33483	X		X	
8	TRIP SPIKE	Jan 27, 2022		Water	W22-Ja33484				X
9	TRIP BLANK	Jan 27, 2022		Water	W22-Ja33485		X		

Date Reported:Feb 07, 2022

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Project Name: ST GEORGE
Project ID: SYDGE295047

Order No.:
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Received: Jan 28, 2022 10:10 AM
Due: Feb 4, 2022
Priority: 5 Day
Contact Name: Matthew Locke

Eurofins Analytical Services Manager : Ursula Long

Sample Detail	Eurofins Suite B7	BTEXN and Volatile TRH	Per- and Polyfluoroalkyl Substances (PFASs)	BTEXN and Volatile TRH
Melbourne Laboratory - NATA # 1261 Site # 1254				
Sydney Laboratory - NATA # 1261 Site # 18217	X	X		X
Brisbane Laboratory - NATA # 1261 Site # 20794			X	
Mayfield Laboratory - NATA # 1261 Site # 25079				
Perth Laboratory - NATA # 2377 Site # 2370				
External Laboratory				
Test Counts	7	1	7	1

Date Reported:Feb 07, 2022

Internal Quality Control Review and Glossary

General

1. Laboratory QC results for Method Blanks, Duplicates, Matrix Spikes, and Laboratory Control Samples follows guidelines delineated in the National Environment Protection (Assessment of Site Contamination) Measure 1999, as amended May 2013 and are included in this QC report where applicable. Additional QC data may be available on request.
2. All soil/sediment/solid results are reported on a dry basis, unless otherwise stated.
3. All biota/food results are reported on a wet weight basis on the edible portion, unless otherwise stated.
4. Actual LORs are matrix dependant. Quoted LORs may be raised where sample extracts are diluted due to interferences.
5. Results are uncorrected for matrix spikes or surrogate recoveries except for PFAS compounds.
6. SVOC analysis on waters are performed on homogenised, unfiltered samples, unless noted otherwise.
7. Samples were analysed on an 'as received' basis.
8. Information identified on this report with blue colour, indicates data provided by customer that may have an impact on the results.
9. This report replaces any interim results previously issued.

Holding Times

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

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

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

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

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

Units

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

Terms

APHA	American Public Health Association
COC	Chain of Custody
CP	Client Parent - QC was performed on samples pertaining to this report
CRM	Certified Reference Material (ISO17034) - reported as percent recovery.
Dry	Where a moisture has been determined on a solid sample the result is expressed on a dry basis.
Duplicate	A second piece of analysis from the same sample and reported in the same units as the result to show comparison.
LOR	Limit of Reporting.
LCS	Laboratory Control Sample - reported as percent recovery.
Method Blank	In the case of solid samples these are performed on laboratory certified clean sands and in the case of water samples these are performed on de-ionised water.
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.
RPD	Relative Percent Difference between two Duplicate pieces of analysis.
SPIKE	Addition of the analyte to the sample and reported as percentage recovery.
SRA	Sample Receipt Advice
Surr - Surrogate	The addition of a like compound to the analyte target and reported as percentage recovery.
TBTO	Tributyltin oxide (*bis*-tributyltin oxide) - individual tributyltin compounds cannot be identified separately in the environment however free tributyltin was measured and its values were converted stoichiometrically into tributyltin oxide for comparison with regulatory limits.
TCLP	Toxicity Characteristic Leaching Procedure
TEQ	Toxic Equivalency Quotient or Total Equivalence
QSM	US Department of Defense Quality Systems Manual Version 5.4
US EPA	United States Environmental Protection Agency
WA DWER	Sum of PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFBS, PFHxS, PFOS, 6:2 FTSA, 8:2 FTSA

QC - Acceptance Criteria

The acceptance criteria should be used as a guide only and may be different when site specific Sampling Analysis and Quality Plan (SAQP) have been implemented

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%

NOTE: pH duplicates are reported as a range not as RPD

Surrogate Recoveries: Recoveries must lie between 20-130% for Speciated Phenols & 50-150% for PFAS

PFAS field samples that contain surrogate recoveries in excess of the QC limit designated in QSM 5.4 where no positive PFAS results have been reported have been reviewed and no data was affected.

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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. 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.
4. Recovery Data (Spikes & Surrogates) - where chromatographic interference does not allow the determination of recovery the term "INT" appears against that analyte.
5. For Matrix Spikes and LCS results a dash "-" in the report means that the specific analyte was not added to the QC sample.
6. 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							
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							
Metals M8							
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	
Method Blank							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	ug/L	< 0.05			0.05	Pass	
Perfluoropentanoic acid (PFPeA)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanoic acid (PFHxA)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanoic acid (PFHpA)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanoic acid (PFOA)	ug/L	< 0.01			0.01	Pass	
Perfluorononanoic acid (PFNA)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanoic acid (PFDA)	ug/L	< 0.01			0.01	Pass	
Perfluoroundecanoic acid (PFUnDA)	ug/L	< 0.01			0.01	Pass	
Perfluorododecanoic acid (PFDoDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotridecanoic acid (PFTrDA)	ug/L	< 0.01			0.01	Pass	
Perfluorotetradecanoic acid (PFTeDA)	ug/L	< 0.01			0.01	Pass	
Method Blank							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	ug/L	< 0.05			0.05	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	ug/L	< 0.05			0.05	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	ug/L	< 0.05			0.05	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	ug/L	< 0.05			0.05	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	ug/L	< 0.05			0.05	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	ug/L	< 0.05			0.05	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	ug/L	< 0.05			0.05	Pass	
Method Blank							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	ug/L	< 0.01			0.01	Pass	
Perfluorononanesulfonic acid (PFNS)	ug/L	< 0.01			0.01	Pass	
Perfluoropropanesulfonic acid (PFPrS)	ug/L	< 0.01			0.01	Pass	
Perfluoropentanesulfonic acid (PFPeS)	ug/L	< 0.01			0.01	Pass	
Perfluorohexanesulfonic acid (PFHxS)	ug/L	< 0.01			0.01	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	ug/L	< 0.01			0.01	Pass	
Perfluorooctanesulfonic acid (PFOS)	ug/L	< 0.01			0.01	Pass	
Perfluorodecanesulfonic acid (PFDS)	ug/L	< 0.01			0.01	Pass	
Method Blank							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	ug/L	< 0.05			0.05	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	ug/L	< 0.01			0.01	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	ug/L	< 0.01			0.01	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 1999 NEPM Fractions							
TRH C6-C9	%	110			70-130	Pass	
TRH C10-C14	%	95			70-130	Pass	
LCS - % Recovery							
BTEX							
Benzene	%	112			70-130	Pass	
Toluene	%	115			70-130	Pass	
Ethylbenzene	%	115			70-130	Pass	
m&p-Xylenes	%	118			70-130	Pass	
o-Xylene	%	114			70-130	Pass	
Xylenes - Total*	%	117			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
Naphthalene	%	111			70-130	Pass	
TRH C6-C10	%	109			70-130	Pass	
LCS - % Recovery							

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Polycyclic Aromatic Hydrocarbons							
Acenaphthene	%	82			70-130	Pass	
Acenaphthylene	%	95			70-130	Pass	
Anthracene	%	85			70-130	Pass	
Benz(a)anthracene	%	78			70-130	Pass	
Benzo(a)pyrene	%	78			70-130	Pass	
Benzo(g.h.i)perylene	%	129			70-130	Pass	
Benzo(k)fluoranthene	%	81			70-130	Pass	
Chrysene	%	72			70-130	Pass	
Dibenz(a.h)anthracene	%	130			70-130	Pass	
Fluoranthene	%	75			70-130	Pass	
Fluorene	%	92			70-130	Pass	
Indeno(1.2.3-cd)pyrene	%	129			70-130	Pass	
Naphthalene	%	78			70-130	Pass	
Phenanthrene	%	82			70-130	Pass	
Pyrene	%	75			70-130	Pass	
LCS - % Recovery							
Total Recoverable Hydrocarbons - 2013 NEPM Fractions							
TRH >C10-C16	%	96			70-130	Pass	
LCS - % Recovery							
Metals M8							
Arsenic	%	111			80-120	Pass	
Cadmium	%	96			80-120	Pass	
Chromium	%	115			80-120	Pass	
Copper	%	112			80-120	Pass	
Lead	%	110			80-120	Pass	
Mercury	%	101			80-120	Pass	
Nickel	%	112			80-120	Pass	
Zinc	%	111			80-120	Pass	
LCS - % Recovery							
Perfluoroalkyl carboxylic acids (PFCAs)							
Perfluorobutanoic acid (PFBA)	%	98			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	%	87			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	%	76			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	%	94			50-150	Pass	
Perfluorooctanoic acid (PFOA)	%	100			50-150	Pass	
Perfluorononanoic acid (PFNA)	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	%	104			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	%	98			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	%	118			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	%	97			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	%	108			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonamido substances							
Perfluorooctane sulfonamide (FOSA)	%	83			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	%	93			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	%	118			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	%	93			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	%	103			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	%	107			50-150	Pass	
LCS - % Recovery							
Perfluoroalkyl sulfonic acids (PFSAs)							
Perfluorobutanesulfonic acid (PFBS)	%	65			50-150	Pass	

Test	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorononanesulfonic acid (PFNS)	%	79			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	%	88			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	%	96			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	%	82			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	%	83			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	%	92			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	%	65			50-150	Pass	
LCS - % Recovery							
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)							
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	%	99			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	%	89			50-150	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	S22-Ja33303	NCP	%	104			70-130	Pass	
Spike - % Recovery									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1					
TRH >C10-C16	S22-Ja33303	NCP	%	129			70-130	Pass	
Spike - % Recovery									
Metals M8				Result 1					
Arsenic	S22-Ja38803	NCP	%	114			75-125	Pass	
Cadmium	S22-Ja38803	NCP	%	100			75-125	Pass	
Chromium	S22-Ja38803	NCP	%	114			75-125	Pass	
Copper	S22-Ja38803	NCP	%	114			75-125	Pass	
Lead	S22-Ja38803	NCP	%	111			75-125	Pass	
Mercury	S22-Ja38803	NCP	%	101			75-125	Pass	
Nickel	S22-Ja38803	NCP	%	116			75-125	Pass	
Zinc	S22-Ja38803	NCP	%	114			75-125	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	W22-Ja33477	CP	%	84			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33477	CP	%	81			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33477	CP	%	94			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33477	CP	%	102			50-150	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33477	CP	%	79			50-150	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33477	CP	%	118			50-150	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33477	CP	%	124			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33477	CP	%	137			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33477	CP	%	114			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33477	CP	%	131			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33477	CP	%	102			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	W22-Ja33477	CP	%	127			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33477	CP	%	86			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33477	CP	%	108			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33477	CP	%	95			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33477	CP	%	74			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33477	CP	%	72			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33477	CP	%	87			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33477	CP	%	87			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33477	CP	%	111			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33477	CP	%	137			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33477	CP	%	69			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33477	CP	%	132			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33477	CP	%	81			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33477	CP	%	98			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33477	CP	%	87			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33477	CP	%	115			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33477	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33477	CP	%	119			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33477	CP	%	140			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	W22-Ja33479	CP	%	94			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33479	CP	%	82			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33479	CP	%	76			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33479	CP	%	93			50-150	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33479	CP	%	89			50-150	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33479	CP	%	112			50-150	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33479	CP	%	112			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33479	CP	%	99			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33479	CP	%	124			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33479	CP	%	106			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33479	CP	%	134			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	W22-Ja33479	CP	%	82			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33479	CP	%	89			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33479	CP	%	119			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33479	CP	%	100			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33479	CP	%	96			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33479	CP	%	98			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33479	CP	%	129			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33479	CP	%	79			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33479	CP	%	77			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33479	CP	%	95			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33479	CP	%	111			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33479	CP	%	87			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33479	CP	%	91			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33479	CP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33479	CP	%	68			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33479	CP	%	101			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33479	CP	%	105			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33479	CP	%	112			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33479	CP	%	78			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	W22-Ja33481	CP	%	99			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33481	CP	%	96			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33481	CP	%	80			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33481	CP	%	97			50-150	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33481	CP	%	95			50-150	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33481	CP	%	116			50-150	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33481	CP	%	110			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33481	CP	%	101			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33481	CP	%	110			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33481	CP	%	116			50-150	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33481	CP	%	127			50-150	Pass	
Spike - % Recovery									

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	W22-Ja33481	CP	%	79			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33481	CP	%	99			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33481	CP	%	106			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33481	CP	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33481	CP	%	95			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33481	CP	%	92			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33481	CP	%	122			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33481	CP	%	66			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33481	CP	%	68			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33481	CP	%	89			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33481	CP	%	87			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33481	CP	%	80			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33481	CP	%	72			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33481	CP	%	91			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33481	CP	%	62			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33481	CP	%	97			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33481	CP	%	108			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33481	CP	%	103			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33481	CP	%	87			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1					
Perfluorobutanoic acid (PFBA)	W22-Ja33483	CP	%	107			50-150	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33483	CP	%	114			50-150	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33483	CP	%	110			50-150	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33483	CP	%	95			50-150	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33483	CP	%	93			50-150	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33483	CP	%	94			50-150	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33483	CP	%	100			50-150	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33483	CP	%	106			50-150	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33483	CP	%	109			50-150	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33483	CP	%	100			50-150	Pass	

Test	Lab Sample ID	QA Source	Units	Result 1			Acceptance Limits	Pass Limits	Qualifying Code
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33483	CP	%	111			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonamido substances				Result 1					
Perfluorooctane sulfonamide (FOSA)	W22-Ja33483	CP	%	102			50-150	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33483	CP	%	98			50-150	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33483	CP	%	98			50-150	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33483	CP	%	91			50-150	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33483	CP	%	115			50-150	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33483	CP	%	80			50-150	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33483	CP	%	103			50-150	Pass	
Spike - % Recovery									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1					
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33483	CP	%	97			50-150	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33483	CP	%	76			50-150	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33483	CP	%	97			50-150	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33483	CP	%	95			50-150	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33483	CP	%	97			50-150	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33483	CP	%	85			50-150	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33483	CP	%	95			50-150	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33483	CP	%	57			50-150	Pass	
Spike - % Recovery									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1					
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33483	CP	%	125			50-150	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33483	CP	%	84			50-150	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33483	CP	%	100			50-150	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33483	CP	%	87			50-150	Pass	
Test	**Lab Sample ID**	**QA Source**	**Units**	**Result 1**			**Acceptance Limits**	**Pass Limits**	**Qualifying Code**
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C6-C9	S22-Ja37941	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
BTEX				Result 1	Result 2	RPD			
Benzene	S22-Ja37941	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Toluene	S22-Ja37941	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Ethylbenzene	S22-Ja37941	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
m&p-Xylenes	S22-Ja37941	NCP	mg/L	< 0.002	< 0.002	<1	30%	Pass	

Duplicate									
BTEX				Result 1	Result 2	RPD			
o-Xylene	S22-Ja37941	NCP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Xylenes - Total*	S22-Ja37941	NCP	mg/L	< 0.003	< 0.003	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
Naphthalene	S22-Ja37941	NCP	mg/L	< 0.01	< 0.01	<1	30%	Pass	
TRH C6-C10	S22-Ja37941	NCP	mg/L	< 0.02	< 0.02	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33477	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33477	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33478	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33478	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33479	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33479	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	W22-Ja33480	CP	mg/L	0.004	0.005	16	30%	Pass	
Cadmium	W22-Ja33480	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	W22-Ja33480	CP	mg/L	0.015	0.017	11	30%	Pass	
Copper	W22-Ja33480	CP	mg/L	0.014	0.018	23	30%	Pass	
Lead	W22-Ja33480	CP	mg/L	0.006	0.008	17	30%	Pass	
Mercury	W22-Ja33480	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	W22-Ja33480	CP	mg/L	0.047	0.047	1.0	30%	Pass	
Zinc	W22-Ja33480	CP	mg/L	0.17	0.16	1.0	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33480	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33480	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	

Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33481	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33481	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 1999 NEPM Fractions				Result 1	Result 2	RPD			
TRH C10-C14	W22-Ja33482	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH C15-C28	W22-Ja33482	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH C29-C36	W22-Ja33482	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Total Recoverable Hydrocarbons - 2013 NEPM Fractions				Result 1	Result 2	RPD			
TRH >C10-C16	W22-Ja33482	CP	mg/L	< 0.05	< 0.05	<1	30%	Pass	
TRH >C16-C34	W22-Ja33482	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
TRH >C34-C40	W22-Ja33482	CP	mg/L	< 0.1	< 0.1	<1	30%	Pass	
Duplicate									
Metals M8				Result 1	Result 2	RPD			
Arsenic	W22-Ja33482	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Cadmium	W22-Ja33482	CP	mg/L	< 0.0002	< 0.0002	<1	30%	Pass	
Chromium	W22-Ja33482	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Copper	W22-Ja33482	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Lead	W22-Ja33482	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Mercury	W22-Ja33482	CP	mg/L	< 0.0001	< 0.0001	<1	30%	Pass	
Nickel	W22-Ja33482	CP	mg/L	< 0.001	< 0.001	<1	30%	Pass	
Zinc	W22-Ja33482	CP	mg/L	0.008	< 0.005	110	30%	Fail	Q15
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanoic acid (PFOA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanoic acid (PFNA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanoic acid (PFDA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorododecanoic acid (PFDoDA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD			
Perfluorooctane sulfonamide (FOSA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Duplicate									
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD			
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorononanesulfonic acid (PFNS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD			
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33482	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33482	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Duplicate									
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD			
Perfluorobutanoic acid (PFBA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass	
Perfluoropentanoic acid (PFPeA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluorohexanoic acid (PFHxA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	
Perfluoroheptanoic acid (PFHpA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass	

Duplicate								
Perfluoroalkyl carboxylic acids (PFCAs)				Result 1	Result 2	RPD		
Perfluorooctanoic acid (PFOA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanoic acid (PFNA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanoic acid (PFDA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroundecanoic acid (PFUnDA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorododecanoic acid (PFDoDA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotridecanoic acid (PFTrDA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorotetradecanoic acid (PFTeDA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonamido substances				Result 1	Result 2	RPD		
Perfluorooctane sulfonamide (FOSA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methylperfluoro-1-octane sulfonamide (N-MeFOSA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethylperfluoro-1-octane sulfonamide (N-EtFOSA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-methylperfluoro-1-octane sulfonamido)-ethanol (N-MeFOSE)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
2-(N-ethylperfluoro-1-octane sulfonamido)-ethanol (N-EtFOSE)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-ethyl-perfluorooctanesulfonamidoacetic acid (N-EtFOSAA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
N-methyl-perfluorooctanesulfonamidoacetic acid (N-MeFOSAA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
Duplicate								
Perfluoroalkyl sulfonic acids (PFSAs)				Result 1	Result 2	RPD		
Perfluorobutanesulfonic acid (PFBS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorononanesulfonic acid (PFNS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropropanesulfonic acid (PFPrS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoropentanesulfonic acid (PFPeS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorohexanesulfonic acid (PFHxS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluoroheptanesulfonic acid (PFHpS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorooctanesulfonic acid (PFOS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Perfluorodecanesulfonic acid (PFDS)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
Duplicate								
n:2 Fluorotelomer sulfonic acids (n:2 FTSAs)				Result 1	Result 2	RPD		
1H.1H.2H.2H-perfluorohexanesulfonic acid (4:2 FTSA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorooctanesulfonic acid (6:2 FTSA)	W22-Ja33483	CP	ug/L	< 0.05	< 0.05	<1	30%	Pass
1H.1H.2H.2H-perfluorodecanesulfonic acid (8:2 FTSA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass
1H.1H.2H.2H-perfluorododecanesulfonic acid (10:2 FTSA)	W22-Ja33483	CP	ug/L	< 0.01	< 0.01	<1	30%	Pass

Comments

Sample Integrity

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

Qualifier Codes/Comments

Code	Description
N01	F2 is determined by arithmetically subtracting the "naphthalene" value from the ">C10-C16" value. The naphthalene value used in this calculation is obtained from volatiles (Purge & Trap analysis).
N02	Where we have reported both volatile (P&T GCMS) and semivolatile (GCMS) naphthalene data, results may not be identical. Provided correct sample handling protocols have been followed, any observed differences in results are likely to be due to procedural differences within each methodology. Results determined by both techniques have passed all QAQC acceptance criteria, and are entirely technically valid.
N04	F1 is determined by arithmetically subtracting the "Total BTEX" value from the "C6-C10" value. The "Total BTEX" value is obtained by summing the concentrations of BTEX analytes. The "C6-C10" value is obtained by quantitating against a standard of mixed aromatic/aliphatic analytes.
N07	Please note:- These two PAH isomers closely co-elute using the most contemporary analytical methods and both the reported concentration (and the TEQ) apply specifically to the total of the two co-eluting PAHs
N11	Isotope dilution is used for calibration of each native compound for which an exact labelled analogue is available (Isotope Dilution Quantitation). The isotopically labelled analogues allow identification and recovery correction of the concentration of the associated native PFAS compounds.
N15	Where the native PFAS compound does not have labelled analogue then the quantification is made using the Extracted Internal Standard Analyte with the closest retention time to the analyte and no recovery correction has been made (Internal Standard Quantitation).
Q15	The RPD reported passes Eurofins Environment Testing's QC - Acceptance Criteria as defined in the Internal Quality Control Review and Glossary page of this report.

Authorised by:

Ursula Long	Analytical Services Manager
Andrew Sullivan	Senior Analyst-Organic (NSW)
John Nguyen	Senior Analyst-Metal (NSW)
Roopesh Rangarajan	Senior Analyst-Volatile (NSW)
Sarah McCallion	Senior Analyst-PFAS (QLD)

Glenn Jackson
General Manager

Final Report – this report replaces any previously issued Report

- Indicates Not Requested

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

Measurement uncertainty of test data is available on request or please click here.

APPENDIX I: EQUIPMENT CALIBRATION RECORDS

Multi Parameter Water Meter

Instrument YSI Quatro Pro Plus
Serial No. 11K101271

Air-Met Scientific Pty Ltd
1300 137 067

Item	Test	Pass	Comments
Battery	Charge Condition	✓	
	Fuses	✓	
	Capacity	✓	
Switch/keypad	Operation	✓	
Display	Intensity	✓	
	Operation (segments)	✓	
Grill Filter	Condition	✓	
	Seal	✓	
PCB	Condition	✓	
Connectors	Condition	✓	
Sensor	1. pH	✓	
	2. mV	✓	
	3. EC	✓	
	4. D.O	✓	
	5. Temp	✓	
Alarms	Beeper	✓	
	Settings	✓	
Software	Version	✓	
Data logger	Operation	✓	
Download	Operation	✓	
Other tests:			

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Standard Solutions	Certified	Solution Bottle Number	Instrument Reading
1. pH 10.00		pH 10.00		370064	pH 9.68
2. pH 7.00		pH 7.00		368081	pH 6.97
3. pH 4.00		pH 4.00		367234	pH 4.00
4. mV		229.6mV		365451/370891	229.4mV
5. EC		2.75mS		362912	2.75mS
6. D.O		0.00 ppm		371864	0.00 ppm
7. Temp		21.9°C		MultiTherm	21.4°C

Calibrated by: Gary Needs

Calibration date: 25/01/2022

Next calibration due: 24/07/2022

PID Calibration Certificate

airmet

Air-Met Scientific Pty Ltd
1300 137 067

Instrument **PhoCheck Tiger**
Serial No. **T-105759**

Item	Test	Pass	Comments			
Battery	Charge Condition	✓				
	Fuses	✓				
	Capacity	✓				
	Recharge OK?	✓				
Switch/keypad	Operation	✓				
Display	Intensity	✓				
	Operation (segments)	✓				
Grill Filter	Condition	✓				
	Seal	✓				
Pump	Operation	✓				
	Filter	✓				
	Flow	✓				
	Valves, Diaphragm	✓				
PCB	Condition	✓				
Connectors	Condition	✓				
Sensor	PID	✓	10.6eV			
Alarms	Beeper	✓	Low	High	TWA	STEL
	Settings	✓	50ppm	100ppm	N/A	N/A
Software	Version	✓				
Data logger	Operation					
Download	Operation	✓				
Other tests:						

Certificate of Calibration

This is to certify that the above instrument has been calibrated to the following specifications:

Sensor	Serial no	Calibration gas and concentration	Certified	Gas bottle No		Instrument Reading
PID Lamp		93ppm Isobutylene	NATA	SY361		92.3 ppm

Calibrated by: **Darcy Keogh**

Calibration date: **3/12/2021**

Next calibration due: **1/06/2022**

EQUIPMENT CERTIFICATION REPORT

KENNARDS HIRE

PGN9003823 GAS ANALYSER – LANDFILL GA5000

Plant Number: 234893

SENSOR	CONCENTRATION	INSTRUMENT READING	TRACEABILITY	PASS
CH4	60 %	60 %	Lot # 1485461	☑
CO2	40 %	40 %	Lot # 1485461	☑
O2	15 %	15 %	Lot # 1371770	☑
CO	60 ppm	60 ppm	Lot # 1371770	☑
H2S	20 ppm	20 ppm	Lot # 1371770	☑

Data Cleared ☑

Battery Status 100 (%)	Temperature 18.5 °C
Electrical Test & Tag (AS/NZS 3760)	Inlet Filter Cleaned/Replaced

Note: Calibration traceability information is available upon request.

Please clean/decontaminate instrument and accessories before returning. A minimum 'Cleaning Fee' $55.00 (Inc GST) may apply if instrument is returned contaminated.

Checked By: Jacob Arndt Date: 21/01/22 Signed: Arndt

Accessories List:

User's Manual & USB	1x Gas Inlet Hoses	1X Gas Inlet Hose With Filter
1x Gas Inlet Hose & Clip Fitting	2x Spare Inlet Filters	1x Flow Through Desiccant
1x Wall Charger	Carry Pouch With Neck Strap	1x USB Comms Cable
Carry Transit Case	Calibration Certificate	

TETRA TECH COFFEY

Job/site details:			
Project name:	St George Dragons	Project Number:	SYDGEZ95047
Fieldwork date(s):		Work completed by:	Cameron Prentice
Type of work (ESA, GME etc)	Drilling, Soil Sampling		

Photoionisation Detector (PID)

Equipment description:	PID		Equipment serial number:	T-105759	
Recommended calibration frequency:	~~Fortnightly~~ 6 months	Last calibration date:	3/12/21	Calibrated by:	Darcy Keogh
Challenge gas standard:		Gas batch #:	1810-2939	Gas expiry date:	July 2021

Field challenge details:

Date	Time	Pass/Fail	Date	Time	Pass/Fail	Date	Time	Pass/Fail
8/12/21	7:30	P	14/12/21	7:30	P			
9/12/21	7:40	P	15/12/21	7:20	P			
10/12/21	7:15	P	16/12/21	7:45	P			
13/12/21	12:00	P						

Lower explosive level (LEL) meter (or multi gas meter)

Equipment description:			Equipment serial number:		
Recommended calibration frequency:		Last calibration date:		Calibrated by:	
Challenge gas standard:		Gas batch #:		Gas expiry date:	

Field challenge details: | If recorded on hot work permit, record HWP number here:

Date	Time	Pass/Fail	Date	Time	Pass/Fail	Date	Time	Pass/Fail
8/12/21	7:30am							
9/12/21	7:40am							
10/12/21	7:15am							
13/12/21	12:00pm							

Water quality meter (WQM)

Equipment description:			Equipment serial number:		
Recommended calibration frequency:		Last calibration date:		Calibrated by:	
Calibration standards:		Batch #:		Gas expiry date:	

Field calibration record:

Date calibrated	DO	Conductivity	pH 4.0	pH 6.88	Temperature

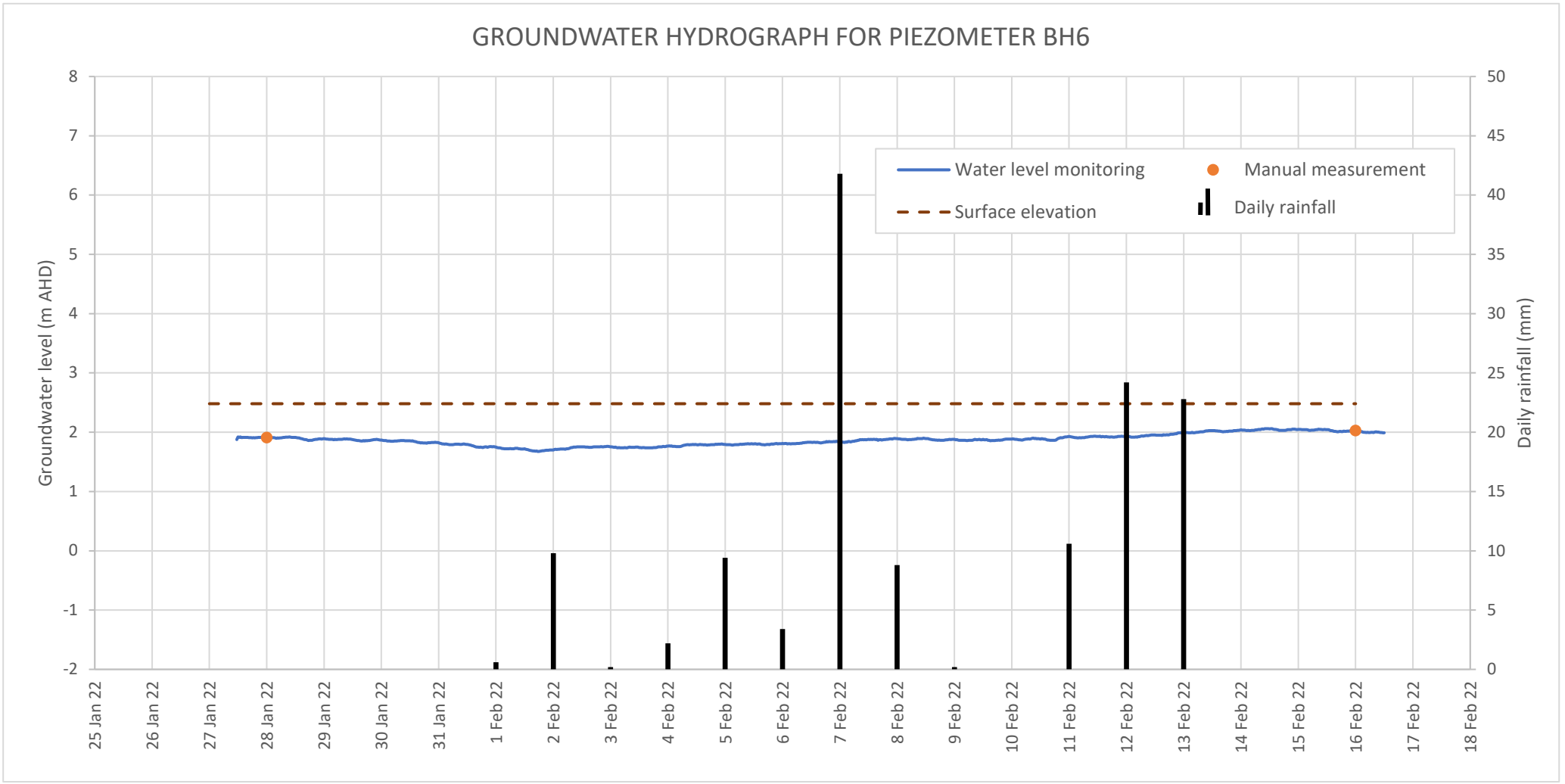
Interface probe (IP)

Equipment description:			Equipment serial number:		
Recommended service frequency:		Last service date:		Serviced by:	

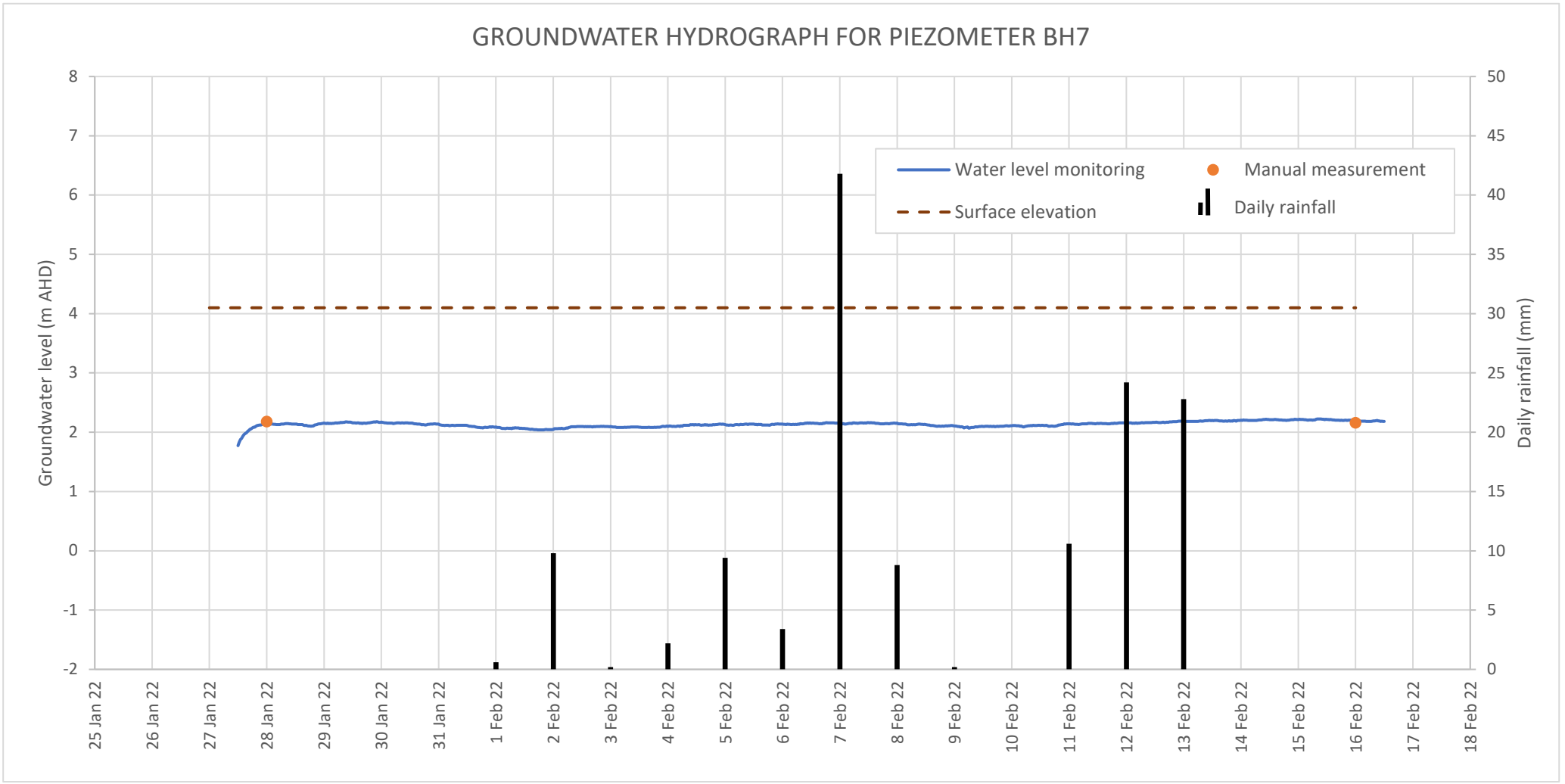
Field challenge details:

Date	Time	Pass/Fail	Date	Time	Pass/Fail	Date	Time	Pass/Fail

APPENDIX J: GROUNDWATER HYDROGRAPHS



drawn	CP / BS	TETRA TECH COFFEY	client:	NS PROJECTS PTY LTD
approved			project:	GROUNDWATER MONITORING - ST GEORGE ILLAWARRA DRAGON'S COMMUNITY & HIGH-PERFORMANCE CENTRE (CHPC)
date	24-Feb-22		title:	GROUNDWATER HYDROGRAPH FOR PIEZOMETER BH6
scale	N/A		project no: 754-SYDGE295047	figure no: FIGURE A1
original size	A4			



drawn	CP / BS
approved	
date	24-Feb-22
scale	N/A
original size	A4

TETRA TECH COFFEY

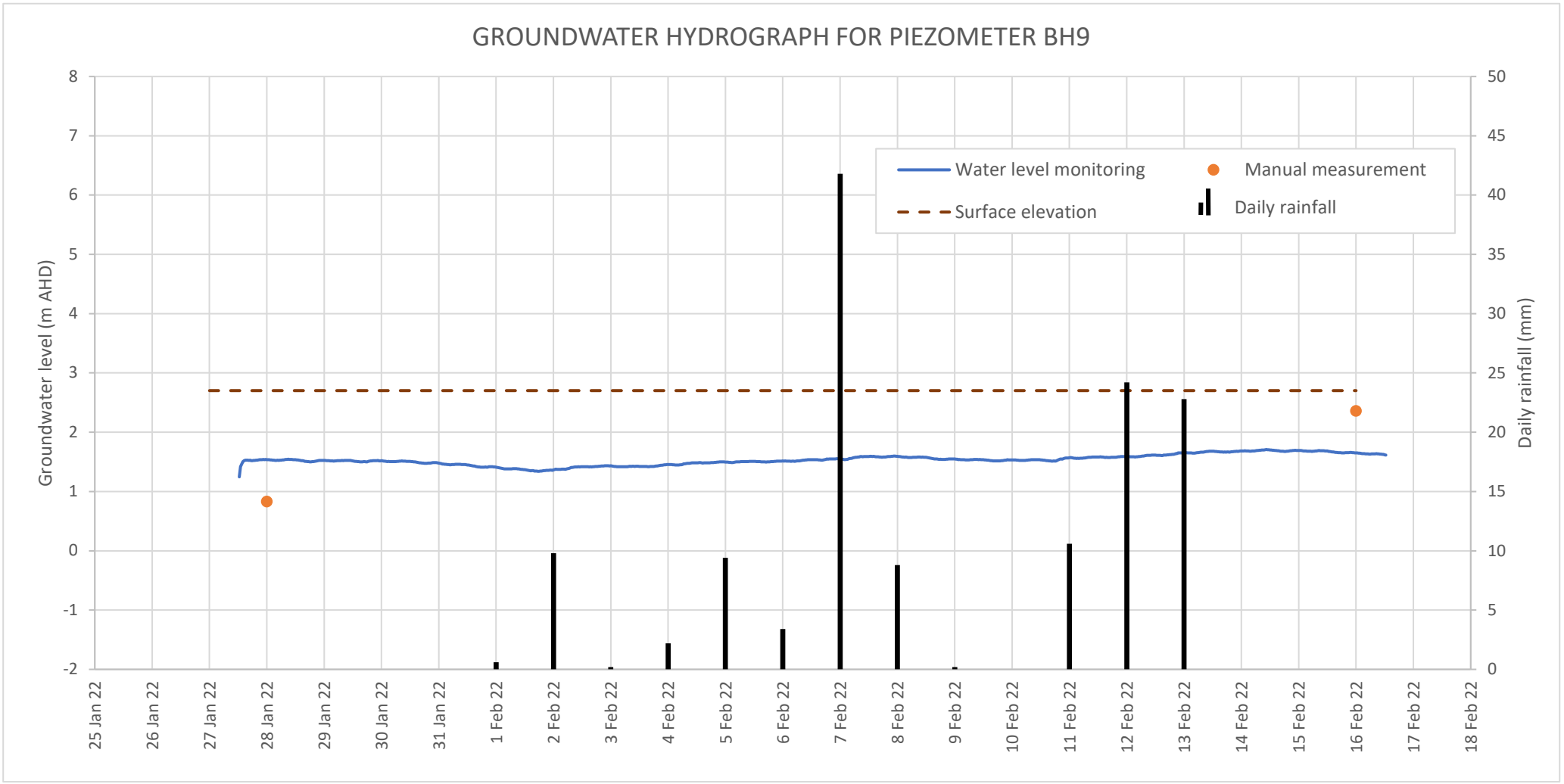
client: **NS PROJECTS PTY LTD**

project: **GROUNDWATER MONITORING - ST GEORGE ILLAWARRA DRAGON'S COMMUNITY & HIGH-PERFORMANCE CENTRE (CHPC)**

title: GROUNDWATER HYDROGRAPH FOR PIEZOMETER BH7

project no: **754-SYDGE295047**

figure no: **FIGURE A1**



drawn	CP / BS
approved	
date	24-Feb-22
scale	N/A
original size	A4

TETRA TECH COFFEY

client: **NS PROJECTS PTY LTD**

project: **GROUNDWATER MONITORING - ST GEORGE ILLAWARRA DRAGON'S COMMUNITY & HIGH-PERFORMANCE CENTRE (CHPC)**

title: GROUNDWATER HYDROGRAPH FOR PIEZOMETER BH9

project no: **754-SYDGE295047**

figure no: **FIGURE A1**