

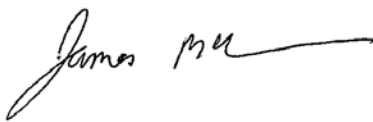
JME24089-2 21 Coxs Lane and 16 George Street Fullerton Cove



Preliminary Contamination Assessment

13 August 2025

For and on behalf of JM Environments



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EXECUTIVE SUMMARY

This report presents the findings of a Preliminary Contamination Assessment (PCA) for 21Coxs Lane and 16 George Street, Fullerton Cove NSW (the site). The site is identified as Lot 201 DP 39968, Lot 1910 DP 557701, Lot 1 DP1006307, Lot 991 DP627179, Lot 1 DP1142113, Lot 3 DP111519 and Lot 1 DP794575. The site is approximately 26 hectares in area. The site location is shown in Figure 1.

The site is part of a proposed masterplan for the redevelopment of Fullerton Cove. The site will include low density houses and townhouses, medium density residential units and bushland.

Port Stephens Council has requested that a Preliminary Contamination Assessment be undertaken as part of the proposal.

The objectives of this PCA were to:

- assess the potential for widespread contamination on the site based on current and historical site activities; and
- consider the suitability of the site for the purpose and/or land use for which the planning proposal envisages will be carried out in the future, based on the potential contamination of the site, and whether the land is suitable in its current state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out).

The scope of work was prepared in accordance with the following guidelines and documents:

- National Environment Protection (Assessment of Site Contamination) Measure 2013;
- NSW EPA Guidelines for Consultants Reporting on Contaminated Land (April 2020); and
- NSW EPA Guidelines for the NSW Site Auditor Scheme 3rd Edition (October 2017).

The scope of works was:

- Review of previous contamination reports supplied by the client;
- Review of published information related to soils, acid sulfate soils, geology and hydrogeology;
- Review of previous site ownership (limited land titles search);
- Review of historical aerial photography over the past 60 to 70 years;
- Review of NSW EPA notices under the Contaminated Land Management Act 1997 and the Protection of the Environment Operations Act 1997;
- Search of WaterNSW groundwater database for records of nearby registered groundwater bores;
- Review and collation of the above information and identification of potential Area of Environmental Concern and Chemicals of Concern;
- Site walkover;
- Preparation of a Conceptual Site Model;

- Fieldwork including the collection of soil samples;
- Laboratory Analysis; and
- Preparation of a Preliminary Contamination Assessment report.

TRH F3 was detected above the adopted assessment criterion (2,500mg/kg) at sampling location BH9 (17,000mg/kg). Zinc was detected above the adopted assessment criterion (200mg/kg) at location BH10 (450mg/kg).

The site has been used for sand mining and sand quarrying. As such the broader site area was expected to have a very low risk of contamination impact. Three areas of environmental concern (the residence, the area of brick and concrete rubble and the truck parking area) were identified as having a higher risk of contamination impact.

Sampling and analysis around the residence indicated that zinc was present at concentrations greater than the adopted assessment criterion than in one of eight samples collected. The concentration was less than 250% of the adopted assessment criterion and is not considered to be a contamination hotspot.

One sample was collected from the truck parking area. The sampling location was selected based on it appearing the freshest and largest oil stain. It was approximately 1m in diameter. Although TRH F3 was detected 6.8 times the adopted assessment criterion, the volume of soil is not significant and does not pose a risk to human health. JME considers that formal remediation is not required for the TRH impact because the impacted soil was judged to be <5tonnes.

Based on information gained from this assessment, JME considers that the site does not pose a significant risk to human health or the environment from a contamination point of view.

It is recommended that the hydrocarbon stains are removed from the truck parking and disposed offsite in accordance with the NSW EPA Classifying Waste Part (Nov 2014). Due to the relatively small volume of soil a formal remediation process is not required and can be managed under the projects Construction Environmental Management Plan.

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ACRONYMS

ACM	asbestos containing material
AEC	Area of Environmental Concern
ASS	acid sulfate soils
BTEX	benzene, toluene, ethylbenzene and xylenes
BTEXN	benzene, toluene, ethylbenzene, xylenes and naphthalene
CLM Act	NSW Contaminated Land Management Act 1997
COC	Contaminant of Concern
CSM	conceptual site model
DP	Deposited Plan
EPA	Environment Protection Authority
JME	JM Environments
NEPM	National Environment Protection (assessment of Site Contamination) Measure 1999 (updated 2013)
OCP	Organochlorine pesticides
PAH	polycyclic aromatic hydrocarbons
PCA	Preliminary Contamination Assessment
PCB	Polychlorinated biphenyls
PFAS	Per-and polyfluoroalkyl substances
POEO Act	NSW Protection of the Environment Operations Act 1997
TRH	total recoverable hydrocarbons
VOC	volatile organic compounds

1 INTRODUCTION

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Port Stephens Council has requested that a Preliminary Contamination Assessment be undertaken as part of the proposal.

2 OBJECTIVES

The objectives of this PCA were to:

- assess the potential for widespread contamination on the site based on current and historical site activities; and
- consider the suitability of the site for the purpose and/or land use for which the planning proposal envisages will be carried out in the future, based on the potential contamination of the site, and whether the land is suitable in its current state (or will be suitable, after remediation) for the purpose for which the development is proposed to be carried out).

3 SCOPE OF WORK

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- Preparation of a Conceptual Site Model;
- Fieldwork including the collection of soil samples;
- Laboratory Analysis; and
- Preparation of a Preliminary Contamination Assessment report.

4 SITE IDENTIFICATION

General site information is provided in Table 1. The site location is shown in Figure 1.

TABLE 1 – SUMMARY OF SITE DETAILS

Site Area:	Approximately 26 hectares
Site Identification	Lot 201 DP 39968, Lot 1910 DP 557701, Lot 1 DP1006307, Lot 991 DP627179, Lot 991 DP627179, Lot 1 DP1142113, Lot 3 DP111519 and Lot 1 DP794575 Local Government Area of Port Stephens Parish of Stowell County of Gloucester
Current Land Use:	The site is currently vacant
Previous Land Use:	Sandmining operations and sand quarrying
Proposed Land Use:	Residential
Adjoining Site Uses:	Residential with some light commercial uses
Site Coordinates:	390880 mE, 6365752 mN (centre of site, GDA2020 – MGA56)
Current Zoning:	Zone RU2 Rural Landscape

5 STATE OR LOCAL GOVERNMENT STATUTORY CONTROLS

The following environmental planning instruments and development control plans apply to the land, either in full or in part:

- State Environmental Planning Policies:
 - State Environmental Planning Policy (Exempt and Complying Development Codes) 2008-All chapters
 - State Environmental Planning Policy (Housing) 2021-All chapters
 - State Environmental Planning Policy (Sustainable Building) 2022-All chapters
 - State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development All chapters
 - State Environmental Planning Policy (Planning Systems) 2021-Chapter 2 State and regional development, Chapter 4 Concurrences and consents
 - State Environmental Planning Policy (Precincts - Regional) 2021-Chapter 2 State significant precincts
 - State Environmental Planning Policy (Primary Production) 2021-Chapter 2 Primary production and rural development
 - State Environmental Planning Policy (Resources and Energy) 2021-Chapter 2 Mining, petroleum production and extractive industries
 - State Environmental Planning Policy (Transport and Infrastructure) 2021-Chapter 2 Infrastructure, Chapter 3 Educational establishments and childcare facilities
 - State Environmental Planning Policy (Resilience and Hazards) 2021-Chapter 3 Hazardous and offensive development, Chapter 4 Remediation of land

- o State Environmental Planning Policy (Biodiversity and Conservation) 2021-Chapter 3 Koala habitat protection 20202
- Local Environmental Plans and Development Control Plans
 - o Port Stephens Local Environmental Plan 2013
 - o Port Stephens Development Control Plan 2014

The following proposed environmental planning instruments and draft development control plans are or have been the subject of community consultation or on public exhibition under the Environmental Planning and Assessment Act 1979, apply to the carrying out of development on the land.

- Proposed State Environmental Planning Policies
 - o There are currently no draft State Environmental Planning Policies that apply to this land.
- Planning Proposals for Local Environmental Plans and Draft Development Control Plans
 - o Coastal Risk Planning Clause Planning Proposal (PP-2023-2568).

6 PREVIOUS CONTAMINATION ASSESSMENTS

6.1 Groundwater Monitoring Event-Fullerton Cove Sand Quarry

JME conducted the *Groundwater Monitoring Event-Fullerton Cove Sand Quarry*, 22 February 2018 (JME2018). JME2018 was engaged as a monitoring event, and comparison to guidelines and discussion of the results was not requested by the client. The objective of JME2018 was to assess the per- and poly-fluoroalkyl substances (PFAS) contamination status of groundwater beneath the site. Four monitoring wells within the quarry boundary and a pair of nested (side by side) wells at the eastern end of George St were sampled, See Figure 2. The four wells within quarry boundary were installed and regularly sampled as part of the quarry's environmental protection license. The purpose and construction details of the nested wells was unknown. However, one of the nested wells had a total depth of 5m which was similar to the quarry monitoring wells. The other nested well had a total depth of 20.5m (the deeper well).

PFAS was not detected above the laboratory reporting limits (0.02µg/L) in the samples collected from quarry and the shallow nested monitoring well. However, Perfluorohexane sulfonic acid (PFHxS) (0.08µg/L) and perfluorooctane sulfonic acid (PFOS) (0.07µg/L) were detected in the deeper nested well.

The positive PFAS results were compared to the guideline values available at the time. Comparison of the positive PFAS results with the current Heads of EPAs Australia and New Zealand (HEPA) PFAS National Environmental Management Plan (NEMP) 2018 water guideline values indicate that the PFOS+PFHxS concentration (0.15µg/L) was more than double the drinking water guideline (0.07µg/L).

The construction details of the nested wells were unknown; however, the normal purpose of nested wells is to collect groundwater samples from different depths from the same location. The inference from one round of monitoring was that the upper groundwater aquifer was not impacted with PFAS compounds, and the lower level of the same aquifer was impacted with PFAS compounds. Caution should be used to draw inferences from one round of sampling.

JME notes the deeper offsite well has since been destroyed by the installation of a Telstra underground service trench.

6.2 Preliminary PFAS Contamination Assessment-Fullerton Cove Sand Quarry

JME conducted the *Preliminary PFAS Contamination Assessment-Fullerton Cove Sand Quarry*, 12 February 2020 (JME2020). The objective JME2020 was to assess if the former quarry was suitable for residential land use from a PFAS impact point of view. 30 locations were sampled in a grid pattern across the site, see Figure 3. A surface sample and a sample from 0.5m was collected from each location using a hand auger.

The samples were analysed for a broad suite of PFAS compounds at the laboratory's low level reporting limit (0.0001mg/kg). PFAS compounds were detected in samples from seven of thirty locations sampled. The detections reported from five of the locations were at or just above the laboratory's low level reporting limit. The two locations that had samples with greater than 3x the laboratory reporting limit were within the bed of an intermittent stream that formed the eastern boundary of the quarry.

The laboratory results were compared with the health screening levels (HSLs) and ecological screening levels (ESLs) for PFAS compounds were sourced from the NEMP. There were no exceedances of the HSLs and ESLs.

JME2020 concluded that the quarry was suitable for residential development from a PFAS impact point of view.

6.3 Asbestos In Soil And Clearance Assessment CSQP Quarry Fullerton Cove

JME conducted the *Asbestos In Soil And Clearance Assessment CSQP Quarry Fullerton Cove*, 29 August 2021 (JME2021). The Department of Planning, Industry and Environment (DPIE) undertook an inspection of the quarry on 26 May 2021 as part of their rehabilitation review of select quarries across NSW. During the inspection, asbestos fragments were observed in the northern extraction area near the offset area. Other construction waste was also observed. DPIE requested CSQP to "inspect and remove asbestos fragments from the site to a licensed asbestos waste facility, in accordance with EPA guidelines and best practice".

Two JM Environments environmental scientists attended the quarry on 17 August 2021. Construction waste is an indicator for the presence of ACM. A 40m x 40m square was established around observed construction waste in the northern extraction area. The square was divided into a 10m x 10m grid.

Each grid was walked over in two directions, at 90° to each other. Grids with either construction waste or observed ACM were raked in two directions, at 90° to each other. The spacing between the rake teeth was 7 mm. The observed ACM was collected into ziplock bags for disposal. Samples of sand were collected from grids containing ACM and sent to SGS Australia Pty Ltd for the analysis of asbestos fines (AF) and friable asbestos (FA). FA and AF were not detected above the laboratory's reporting limit in the sand samples.

Based on the field observations and laboratory results, it is considered that the asbestos impacted area assessed by JME was suitable for residential use from an asbestos contamination point of view.

7 ENVIRONMENTAL SETTING

7.1 Site Topography and Drainage

A topographic map (Geoscience Australia online data, <https://www.ga.gov.au/home>) indicated that the site lies on a relatively flat land. The Fullerton Cove waterbody is approximately 1.4km west of site. Long Bight Swamp is approximately 400m west of site. The Tasman Sea is approximately 2.7km to the east of site. See Figure 1. The site's elevation is approximately 5-10m AHD and gently slopes away to the west/south west. Stormwater was expected to either drain into a combination intermittent streams and manmade drainage channels that discharge into Long Bight Swamp or infiltrate into the underlying groundwater.

7.2 Local Soils

The NSW Department Planning, Industry and Environment's eSpade NSW Soil and Land Information website indicates the site lies upon the Hawks Nest Soil Landscape which is defined as:

Landscape— low Holocene sandsheets and low transgressive dunes on the Tomago Coastal Plain. Local relief <3 m, slope gradients <10%, elevation 3–12 m. Dry scrubland, woodland and tall open forest.

Soils— deep (>300 cm), well-drained Podzols (Uc2.3) and Siliceous Sands/Podzols (Uc2.21) on dunes, deep (>200 cm), poorly drained Humus Podzols (Uc5.1) on sandsheets.

Qualities and Limitations— wind erosion hazard, high watertables (localised), seasonal waterlogging (localised), permanent waterlogging (localised), noncohesive, potential acid sulphate soils, ground water pollution hazard.

7.3 Local Geology

The Newcastle 1:250,000 Geology Sheet indicated that the site is located in Quaternary-aged alluvial and fluvial deposits. As such, the site is underlain by sedimentary deposits comprising mixtures of sands, silts, clays, gravels and "Waterloo Rock".

Soil conditions can vary considerably over relatively short distances in a meandering river valley setting.

Broadly, units within the Quaternary Alluvium comprise (from oldest to youngest) Pleistocene clay, Pleistocene barrier sands, Holocene estuarine clay and recent floodplain deposits. Beneath these sediments, the bedrock comprises interbedded sandstone, siltstone, mudstone and coal of the Permian-aged Tomago Coal Measures.

The Pleistocene clay is typically stiff to hard and forms the basal surface for the younger deposits. The depth to Pleistocene clay may be typically of the order of 10m to 15m but can be as deep as 30m to 50m within paleochannels. The Pleistocene barrier sands are typically quartz sands, ranging from 5m to 35m in thickness. Within the sand deposits are cemented 'Coffee Rock' deposits.

7.4 Local Hydrogeology

WaterNSW operates a website listed as realtimedata.waternsw.com.au, with search tools that provide summary reports on registered bores in NSW. A search of this website indicated that

there were 2 registered bores within 500m of the site. A summary of groundwater bore information is presented in Table 2. There was no useful information available. The groundwater bore locations area shown in Figure 4. The groundwater search results are in Appendix A.

TABLE 2 - GROUNDWATER WELL SUMMARY INFORMATION

Well ID	Total Depth (m)	Standing Water Level (m)	Water Bearing Zone (m)	Water bearing lithology	Purpose
GW079378	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded
GW079779	Not recorded	Not recorded	Not recorded	Not recorded	Not recorded

JME conducted groundwater monitoring as required by the sand quarry's environmental protection licence from July 2015 to July 2020 on a quarterly basis. A summary of the groundwater summary data is attached in Appendix B. The locations of the monitoring bores are shown in Figure 2. Groundwater beneath the site was around 1.5-2m below the base of the quarry floor in an unconfined sand aquifer. The monitoring data indicated the quarry operations had no measurable impact on the groundwater quality. Groundwater is expected to flow in a westerly/south westerly direction toward Fullerton Cove waterbody. It is noted that the PFAS Secondary Management Zone (SMZ) is approximately 1.7km north of the site and it is likely that the SMZ is not up hydraulic gradient from site.

7.5 Acid Sulfate Soils

A review of the online acid sulfate risk map (<https://www.environment.nsw.gov.au/eSpade2Webapp>) indicates that the site lies on an area with low probability >3 m below ground surface in the eastern part of site. JME notes that the northern portion of site had been subjected to sand mining and sand quarrying in the past. The site elevation has been lowered in the quarried portion of site.

The acid sulfate soil risk map is shown in Figure 5.

8 SITE HISTORY REVIEW

8.1 Section 10.7 Certificate

Section 10.7 Planning Certificates for the site dated 20 December 2024 was obtained from Port Stephens Council. A copy of the certificate is provided in Appendix C. Table 3 summarises the relevant information contained within the certificate.

TABLE 3 – SECTION 10.7 CERTIFICATE SUMMARY

Current Zoning:	RU2 Rural Landscape
Council and other public authority policies on hazard risk restrictions	The land is NOT within a heritage conservation area under an environmental planning instrument Council HAS NOT adopted a policy or been notified of any adopted policy of another public authority, that restricts development on the land because of the likelihood of landslip, tidal inundation, subsidence, <u>contamination</u> , salinity, coastal hazards or sea level rise.
Loose-fill asbestos insulation	No, the land does not include any residential dwelling identified on the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation. information, please contact Department of Fair Trading by

Acid Sulfate Soil	Clause 7.1 Acid Sulfate Soils of the Port Stephens Local Environmental Plan 2013 applies to the land. Acid sulfate soil mapping can be viewed on the NSW Department of Planning, Housing and Infrastructure Spatial Viewer
Significantly contaminated land	The land is NOT significantly contaminated land within the meaning of the <i>Contaminated Land Management Act 1997</i> .
Potential acid sulfate soils:	Works carried out on the land must be undertaken in accordance with Clause 6.1 Acid sulfate soils of the Newcastle Local Environmental Plan 2012.
RAAF Base Williamstown PFAS Management Area	The land is within the Williamstown RAAF Base Per- and Poly-Fluoroalkyl Substances (PFAS) Management Area. The Department of Defence is undertaking a long-term environmental investigation and assessment of the Williamstown RAAF Base site and surrounding areas as relates to PFAS contamination.
Mine Subsidence:	No, the land is not within a proclaimed or declared mine subsidence district.
Matters prescribed under the Contaminated Land Management Act 1997	There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

8.2 NSW EPA Records

8.2.1 Contaminated Land Management Act 1997

A review of the NSW EPA's public register of contaminated sites under Section 58 of the Contaminated Land Management Act 1997 (the CLM Act) on 20 December 2024 revealed no records for Fullerton Cove. If a site does not appear on the record, it may still be affected by contamination. For example:

- Contamination may be present, but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the planning process.

8.2.2 Protection of the Environment Operations Act 1997

Section 308 of the NSW Protection of the Environment Operations Act 1997 (the POEO Act) includes:

- environment protection licences;
- applications for new licences and to transfer or vary existing licences;
- environment protection and noise control notices;
- penalty notices issued by the EPA;
- convictions in prosecutions under the POEO Act;
- the results of civil proceedings;
- licence review information;
- exemptions from the provisions of the POEO Act or regulations;
- approvals granted under clause 9 of the POEO (Control of Burning) Regulation; and
- approvals granted under clause 7A of the POEO (Clean Air) Regulation.

A search of the public register under Section 308 of the POEO Act 1997 on 20 December 2024 revealed fourteen records for Fullerton Cove. Four records referred to a sand quarry at 18020 Coxs Lane, outside the study area. Nine records referred to the site. Three records were a petroleum exploration, assessment, and production licence at 397 Fullerton Cove Road.

The search results are in Appendix D and the licensed facility locations are shown in Figure 6.

8.2.3 EPA Website Search

“Fullerton Cove” was searched on the NSW EPA website on 20 December 2024. The NSW EPA contained a number of fact sheets and some preliminary surface and groundwater data for the Fullerton Cove Area. The information relevant to site is provided in Appendix E and summarised below.

The site is within the “Broader Management Zone” (BMZ), See Figure 7. The BMZ refers to the area round the Primary and Secondary Management Zones. The topography and hydrology of the BMZ means that PFAS detections “could occur now and into the future” (19/12/2017).

PFOS and PFOA concentrations in surface water near to site were <0.02µg/L, January and May 2016.

Drains from the Primary Management Zones pass along the edge of the Fullerton Cove water body and do not pass through site. These drains are hydraulically across and down gradient from site.

Advice provided by the NSW EPA the use of groundwater and surface water and home grown produce for people in the BMZ was precautionary and was not based on specific data.

Dust borne PFAS is not considered a significant inhalation risk and not a significant migration pathway.

PFOS/PFOA not detected (<0.02µg/L) in groundwater wells along the southside of Cabbage Tree Road (20/10/2015). The *Preliminary Groundwater Investigation Results – Williamtown NSW* 20 October 2015 map included the NSW Office of Water approval numbers for these wells, 20WA213114D and 20WA203901. JME correlated these approvals with the registered groundwater bores GW203311 and GW203311 from the WaterNSW website realtimedata.waternsw.com.au. PFOS/PFOA was detected at concentrations significantly greater than the Drinking Water Guidelines in registered groundwater bore GW080079 north of Cabbage Tree Road. A summary of groundwater bore information is presented in Table 4. The groundwater bore locations area shown in Figure 4. The groundwater search results are in Appendix A.

TABLE 4 - GROUNDWATER WELL SUMMARY INFORMATION

Well ID	Total Depth (m)	Standing Water Level (m)	Water Bearing Zone (m)	Water bearing lithology	Purpose
GW080079	8.57	1.10	0.4-8.40	Sand	Monitoring bore
GW078012	7.00	Not recorded	1.5-7.00	unknown	Domestic
GW0203311	7.30	0.950	1.40-7.30	Sand	Stock

8.3 Aerial Photograph Review

Historic aerial photographs of the site dating back to 1953 were downloaded from the NSW Land and Property Management Authority, and reviewed by a JME environmental scientist, along with imagery available on Google Earth™. The results of the aerial photograph review are summarised in Table 5. Photographs are attached as Figures 8 to 15.

TABLE 5 – AERIAL PHOTOGRAPH REVIEW

Year	Site	Surrounding Land
1953	The northern part of site is cleared and a portion of it may be quarried for sand. There is large shed adjacent to the quarried area.	Fullerton Cove Road is visible as a formed road. Coxs Lane appears to be a dirt track. Some residences appear along both roads. West of Fullerton Cove Road and a portion east of Fullerton Cove Road appeared to be used for market garden farms. The central and south eastern portion of site are forested. Straight drainage channels can be seen from the western side of Fullerton Cove Road and joining the Fullerton Cove ring drain. Market garden farms and broadacre grazing is dominant land use in the cleared areas.
1965	Similar to 1953. The residence on Coxs Lane is visible.	Similar to 1953 and a large shed at what is now Sid Foggs bus depot is visible
1975	The central portion of site has been stripped of vegetation and being sand mined. The large shed noted in 1953 has been removed. The large offsite shed noted in 1965 appears to be connected to the sand mine via a dirt road.	Nelson Bay Road has been constructed.
1983	The sand mining operation has appeared to cease, and some regrowth is evident	George Street and the residences along it is visible. Buses are parked at the Sid Foggs depot and the above ground diesel tank is visible. More houses appear along Coxs Lane. Some land has been cleared at the eastern end of Coxs Lane.
1992	Similar to 1983	Market garden farming is no longer evident, and the open space land looks to be returned to pasture. A large parcel east of Nelson Bay Road has been cleared. Most likely was sand mined and regrowth is evident.
2004	A large shed with a gravel apron is located on the northern portion of site.	The sand mine at the eastern end of Coxs Lane has been extended south.
2013	Sand quarrying has commenced at the former sand mine	Similar to 2004 with some evidence of filling at properties west of Willow Lane
2018	The large shed has been removed	Similar to 2013
2022	Similar to 2013.	Similar to 2018. Filling evident at 351 and 345 Fullerton Cove Road

8.4 Historical Maps

The 1922 Parish of Stowell Map and 1923 Parish of Stockton Map indicated the majority of the site belonged to 5 individuals over six lots of land. Copies of the parish maps are included in Appendix F.

8.5 Historical Titles Search

A search of historical titles for the site was undertaken by JME. A list of past registered proprietors for the lots was obtained dating back to 1889. The results of the search are summarised in Table 6 and are included in Appendix G.

TABLE 6: HISTORICAL TITLE SUMMARY

	201/39968	1910/557701	1/1006307	1/1142113	201/39968	991/627179
2015-current	Coastal Developments (NSW) Pty Ltd					
2012	BD(NSW) Project J001 Pty Ltd (Receivers and Managers Appointed)					
2007	Buildev Properties Pty Ltd					
2005						Buildev Properties Pty Ltd
1970	Arthur Bayley Smith, Technical Officer and Helen Smith					
2003						Patrick Martyn Patricia Anne Martyn David Michael Martyn Fiona Kay Martyn
1982						Dandrew Pty Ltd (Fogg)
1977						AF Toll Transport Limited
1928						Leslie Sansom
1928						Sarah Ann West
1889						William West

8.6 Site Walkover

A walkover was conducted by JME environmental scientist on 11 December 2024. The site was largely unchanged since JME ceased monthly monitoring visits in July 2020. The site was accessed via a gravel driveway of Coxs Lane. Coxs Lane was asphalt sealed with no kerb or guttering. A stormwater culvert under Coxs Lane links the site with the forested area to the south.

A residence constructed of weatherboard and fibre cement sheeting fronted Coxs Lane. JME was informed that a small above ground diesel tank was located at the rear of the residence and was used by the previous owners.

Some rehabilitation of the quarry floor had been undertaken by spreading imported soil/mulch. A gravel hardstand was present on the quarry floor and was used for truck parking.

Some building rubble was present in the location of the asbestos assessment discussed in Section 5.3.



Photo 1: Site entrance



Photo 2: Former residence



Photo 3: Small metal bund of former diesel tank.



Photo 4: Minor hydrocarbon staining on truck parking area



Photo 6: Area impacted with minor amounts of brick and concrete rubble.



Photo 7: Northern unquarried portion of site

8.7 Site History Summary

The site lies within Port Stephens local government area. The site lies within the BMZ for PFAS contamination as designated by the NSW EPA. The BMZ is precautionary zone based on the proximity of known PFAS soil and groundwater impacts to the north of site and not based on known PFAS contamination linked with the SMZ. Sampling analysis of the sites soils and groundwater for PFAS indicated that site was significantly impacted by PFAS beyond what could considered as ubiquitous background levels.

Historical aerial photography indicated that:

- A portion of the site had been sand mined from around 1975-1983 and then quarried for sand from the early 2000s until 2019;
- The large shed noted in the 2004 aerial photograph was demolished and approximately 3-4m of sand was quarried from beneath it.

There was a small area of land that was impacted with a minor amount of asbestos containing material which was subsequently remediated and validated

8.8 Data Gaps

The origin of the asbestos and brick/concrete was unknown.

9 PRELIMINARY CONCEPTUAL SITE MODEL

A preliminary conceptual site model (CSM) was developed based on the information reviewed and observations made during the site walkover. A CSM is a representation of the relationships between potential sources of contamination, receptors and exposure pathways.

Contamination, if not managed appropriately, could pose a 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 via a transport mechanism (pathway).

9.1 Potential Sources of Contamination.

Hazardous building materials including asbestos, lead and zinc were likely to present in residences and quarry buildings. Pesticides were potentially used to control termites and other insects. An above ground diesel tank was also located next to the residence.

The brick and concrete rubble indicate there may be additional contaminants beyond asbestos containing materials (which have been remediated and validated).

The truck parking hardstand contained some minor amounts of hydrocarbon staining.

In each case, the soil contamination would be from top down.

Concentrated waste mineral sands were buried in places on old mine sites. These places were normally located near the processing plants. These wastes may contain thorium, which is radioactive. Although naturally occurring along beaches, once concentrated, these radioactive materials are a potential health hazard and need to be managed. However, there was no evidence of these types of materials or processing plants on site.

9.2 Potential Chemicals of Concern

The chemicals of concern are:

- Former residence:
 - Asbestos, TRH, PAH, OCP, heavy metals
- Truck parking hardstand;
 - BTEX, TRH, PAH, phenols and VOCs
- Area containing some brick and concrete rubble of unknown origin;
 - BTEX, TRH, PAH, OCP, heavy metals

9.3 Potentially Affected Media, Receptors and Transport Mechanisms

Potential transport mechanisms are:

- Erosion and sedimentation from stormwater runoff during construction;
- Contaminated dust becoming airborne by the action of wind, vehicle and plant movements transporting contamination around the site during construction.

The exposure pathways are dermal contact with soil, ingestion of soil and the inhalation of dust contaminants.

The potential receptors are:

- Current and future site residents and employees;
- site development workers; and
- the local ecology.

If significant contamination does exist on site and is not remediated and or managed the exposure pathway for current site workers, site development workers, future site workers and visitors is potentially complete as they may be exposed to contaminated soil.

10 FIELDWORK

As part of this PCA, samples of soils were collected. Sampling was undertaken 11 December 2024.

Soil sampling locations are shown in Figure 16. Soil samples were collected using a pincer shovel by digging up to 500mm in to the surface. The samples were collected from the spoil pile of each hole. The sample were collected by hand using disposable nitrile gloves that were changed after each sample. The pincer shovel was washed between each hole with a Decon90/tap water solution then rinsed with tap water.

The samples were placed in a laboratory supplied glass jars with Teflon lined lids and labelled with a unique identifier. A second subsample was collected from four location around the residence and placed into a ziplock bag. The samples were stored in a cooler box awaiting transportation to the laboratory.

11 LABORATORY ANALYSIS

Soil and water primary samples and associated QA/QC samples were delivered to SGS Australia Pty Ltd by courier under chain of custody conditions.

Soil and groundwater interlaboratory duplicates were forwarded to ALS Sydney by SGS under chain of custody conditions.

The samples were analysed for a selection of:

- BTEX;
- TRH;
- PAH;
- OCP;
- Heavy metals;
- VOC; and
- Asbestos.

12 SOIL ASSESSMENT CRITERIA

Soil trigger values were established from the NEPM Schedule B1, Guideline on Investigation Levels for Soil and Groundwater. The NEPM provides a framework for the use of investigation and screening levels. The framework is based on a matrix of human health and ecological soil investigation screening levels and guidance for specific contaminants. The selection of the most appropriate investigation levels for use in a range of environmental settings and land use scenarios should consider factors including the protection of human health, ecosystems, groundwater resources and aesthetics. A balance between the use of generic soil, soil vapour and groundwater criteria and site-specific considerations are essential practice in site assessment.

The site is zone R3. JME considers the most sensitive permissible uses are residential and childcare facilities. Therefore, HIL A - Residential with garden/accessible soil (home grown produce <10% fruit and vegetable intake (no poultry), also includes childcare centres, preschools and primary schools as the most suitable exposure scenario.

Soil health investigation level (HILs), health screening levels (HSLs) and management limits were developed from:

- Table 1A(1) Health investigation levels for soil contaminants;
- Table 1A(3) Soil HSLs for vapour intrusion;
- Table 1B(7) Management Limits for TPH fractions F1-F4 in soil
- Table 1B(1) Soil-specific added contaminant limits for aged zinc in soil;
- Table 1B(2) Soil-specific added contaminant limits for aged copper in soils;
- Table 1B(3) Soil-specific added contaminant limits for aged chromium III and nickel in soil;
- Table 1B(4) Generic added contaminant limits for lead in soils irrespective of their physicochemical properties;
- Table 1B(5) Generic EILs for aged As, fresh DDT and fresh naphthalene in soils irrespective of their physicochemical properties;
- Table 1B(6) ESLs for TPH fractions F1 – F4, BTEX and benzo(a)pyrene in soil; and
- Table 1 B(7) Management Limits for TPH fractions F1-F4 in soil.

ACLs were selected based on the most conservative (ie lowest) values for CEC (10 cmolc/kg) and pH (4.5) as modelled on the NSW Department Planning, Industry and Environment's eSpade NSW Soil and Land Information website.

EILs for copper, chromium, nickel, lead and zinc were calculated by adding the ACL to an assumed background concentration (ABC) for 'old suburb, high traffic' sites (taken from NEPM Schedule B5c, Guideline on Ecological Investigation Level for Arsenic, Chromium (III), Copper, DDT, Lead, Naphthalene, Nickel & Zinc).

Sampled material was observed to be predominantly sand and gravel therefore, where ESLs are dependent on particle size, the coarse grain size has been used. Where a COC has a level listed in more than one table, the more conservative value was adopted as the DGV.

Adopted soil assessment criteria are shown in Table 7.

TABLE 7: SOIL ASSESSMENT CRITERIA

Analyte Name	Units	HIL	HSL	ESL	Management Limit
Benzene	mg/kg	-	0.5	-	-
Toluene	mg/kg	-	160	-	-

Analyte Name	Units	HIL	HSL	ESL	Management Limit
Ethylbenzene	mg/kg	-	55	-	-
Xylenes	mg/kg	-	40	-	-
TRH C6-C10 (F1)	mg/kg	-	45	-	700
TRH >C10-C16 (F2)	mg/kg	-	110	-	1,000
TRH >C16-C34 (F3)	mg/kg	-	-	-	2,500
TRH >C34-C40 (F4)	mg/kg	-	-	-	10,000
Naphthalene	mg/kg	-	3	170	-
Benzo(a)pyrene	mg/kg	-	-	-	-
BaP TEQ	TEQ	3	-	-	-
Total PAH	mg/kg	300	-	-	-
DDT	mg/kg	-	-	180	-
DDT+DDE+DDD	mg/kg	240	-	-	-
Aldrin and Dieldrin	mg/kg	6	-	-	-
Chlordane	mg/kg	530	-	-	-
Endosulfan	mg/kg	50	-	-	-
Endrin	mg/kg	10	-	-	-
Heptachlor	mg/kg	6	-	-	-
HCB	mg/kg	10	-	-	-
Methoxychlor	mg/kg	300	-	-	-
Total PCBs	mg/kg	1	-	-	-
Arsenic, As	mg/kg	100	-	100	-
Cadmium, Cd	mg/kg	20	-	3	-
Chromium, Cr (VI)	mg/kg	100	-	410	-
Copper, Cu	mg/kg	6,000	-	240	-
Lead, Pb	mg/kg	300	-	1,100	-
Nickel, Ni	mg/kg	400	-	310	-
Zinc, Zn	mg/kg	7,400	-	920	-
Mercury	mg/kg	10	-	1	-
Bonded ACM	%	-	0.01%	-	-
FA and AF (friable asbestos)	%	-	0.001%	-	-

In the NEPM, the preferred approach is to examine a range of summary statistics including the contaminant range, median, arithmetic/geometric mean, standard deviation (SD) and 95% upper confidence limit (UCL).

The NEPM recommends, at the very least, the maximum and the 95% UCL of the arithmetic mean contaminant concentration should be compared to the relevant DGV. The implications of localised elevated values (hot spots) should also be considered. The results should meet the following criteria:

- The SD of the results should be less than 50% of the relevant investigation or screening level; and
- No single value should exceed 250% of the relevant investigation or screening level.

Laboratory results were compared with soil investigation and screening levels for commercial/industrial land use. The comparisons are summarised in Summary Table 1

13 QUALITY ASSURANCE / QUALITY CONTROL

The samples were placed laboratory supplied plastic jars and ziplock bags. Samples were kept on ice during transport and received by the primary laboratory at a temperature of 11.2°C. Due to the shallow nature of the sampling, the slightly elevated receival temperature was unlikely to affect the interpretation of the results.

Samples were transported to the laboratory under CoC conditions (CoC documentation is included in Appendix H) and received by the laboratories with sufficient time to undertake analyses within specified holding times.

During the assessment, field duplicate and triplicate, and rinsate samples were collected and analysed, to check whether field sampling procedures produced reliable results. The RPD of analyte concentrations between duplicates/triplicates and their respective primary samples were calculated to be within the acceptance criterion of 50% for concentrations greater than 5x the laboratory limit of reporting (LOR).

RPD results are included in Summary Table 2 (attached).

During the fieldwork a rinsate sample was collected from the pincer shovel (QCA). The rinsate sample was submitted and analysed for heavy metals to assess the effectiveness of decontamination procedures. Copper (17µg/L) and zinc (18µg/L) were detected at concentrations typical of tap water. This indicates that the risk of cross contamination was minimal.

QA/QC results are included in Summary Table 2 (attached).

SGS is NATA-accredited for the analyses requested. SGS conducted internal quality control using spikes, laboratory duplicates and method blanks. A review of SGS' DQOs for the analysis of soil samples indicated that DQOs were met in QA/QC analysis on samples submitted by JME with exception of low recoveries of PAH surrogates in one sample and phenol surrogates in another.

Based on a review of QA/QC results it is considered that analytical results are indicative of the contamination status of the site at the time of sampling. The highest value of the primary sample, duplicate sample and triplicate sample was used for the assessment.

Laboratory QA/QC documentation is included in Appendix H.

14 RESULTS AND DISCUSSION

14.1 Fieldwork

The materials sampled were SAND ranging in colour from light brown, dark brown and dark grey. A small amount of imported orange gravelly CLAY was at sampling point BH15. Road base gravel was encountered at sampling location BH9 (haul road, truck parking area).

14.2 Laboratory Results

The laboratory results are summarised in Summary Table 1 (attached).

The following the contaminants of concern were not detected above the laboratory limit of reporting:

- Asbestos

- BTEX;
- TRH F1;
- OCP
- PCB; and
- VOC/Chlorinated hydrocarbons.

The following contaminants of concern were detected above the laboratory LOR in some samples but below the adopted assessment criteria:

- TRH F2 and F4;
- Phenols
- Arsenic, cadmium, chromium, copper, lead, nickel, zinc and mercury

TRH F3 was detected above the adopted assessment criterion (2,500mg/kg) at sampling location BH9 (17,000mg/kg). Zinc was detected above the adopted assessment criterion (200mg/kg) at location BH10 (450mg/kg).

14.3 Discussion

The site has been used for sand mining and sand quarrying. As such the broader site area was expected to have a very low risk of contamination impact. Three areas of environmental concern (the residence, the area of brick and concrete rubble and the truck parking area) were identified as having a higher risk of contamination impact.

Sampling and analysis around the residence indicated that zinc was present at concentrations greater than the adopted assessment criterion than in one of eight samples collected. The concentration was less than 250% of the adopted assessment criterion and is not considered to be a contamination hotspot.

One sample was collected from the truck parking area. The sampling location was selected based on it appearing the freshest and largest oil stain. It was approximately 1m in diameter. Although TRH F3 was detected 6.8 times the adopted assessment criterion, the volume of soil is not significant and does not pose a risk to human health. JME considers that formal remediation is not required for the TRH impact because the impacted soil was judged to be <5tonnes.

15 CONCLUSION AND RECOMMENDATIONS

Based on information gained from this assessment, JME considers that the site does not pose a significant risk to human health or the environment from a contamination point of view.

It is recommended that the hydrocarbon stains are removed from the truck parking and disposed offsite in accordance with the NSW EPA Classifying Waste Part (Nov 2014). Due to the relatively small volume of soil a formal remediation process is not required and can be managed under the projects Construction Environmental Management Plan.

REFERENCES

- National Environment Protection (Assessment of Site Contamination) Measure (1999 (amended 2013)) Schedule B2, Guideline on Site Characterisation
- NSW Contaminated Land Management Act (1997)
- Newcastle 1:250,000 Geological Series Sheet SI 56-2
- National Environment Protection (Assessment of Site Contamination) Measure 2013; Guidelines for Consultants Reporting on Contaminated Sites (April 2020); and Guidelines for the NSW Site Auditor Scheme (3rd Edition, NSW EPA October 2017).
- NSW Protection of the Environment Operations Act (1997)
- www.environment.nsw.gov.au/acidsulfatesoil/riskmaps.htm
- Google Earth
- www.environment.nsw.gov.au/eSpade2Webapp
- www.maps.six.nsw.gov.au
- realtimedata.waternsw.com.au/
- JME *Groundwater Monitoring Event-Fullerton Cove Sand Quarry*, 22 February 2018
- JME *Preliminary PFAS Contamination Assessment-Fullerton Cove Sand Quarry*, 12 February 2020
- JME *Asbestos In Soil And Clearance Assessment CSQP Quarry Fullerton Cove*, 29 August 2021

LIMITATIONS

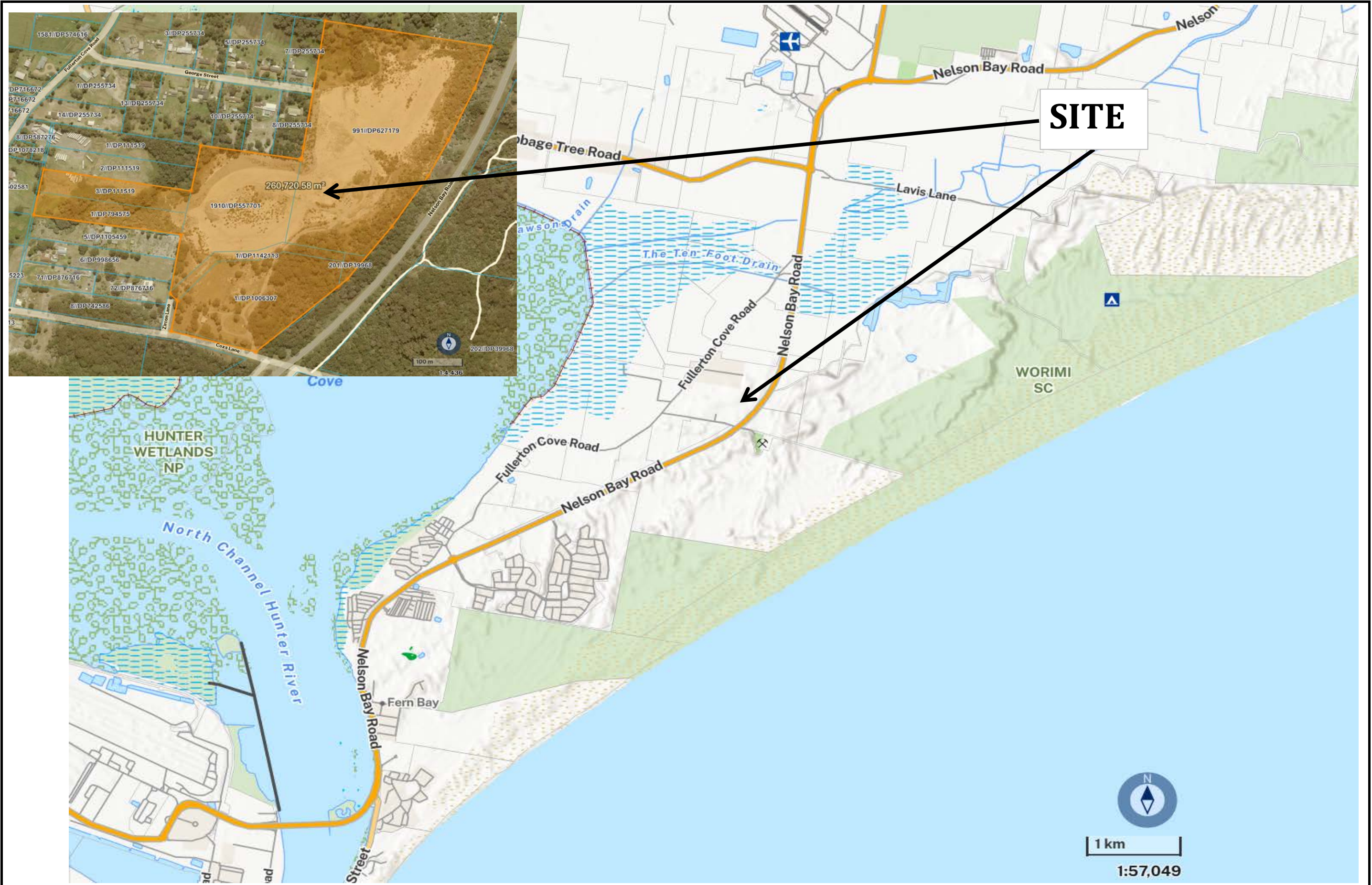
In preparing this report, current guidelines for assessment and management of contaminated land were followed. This work has been conducted in good faith, in accordance with JM Environments' understanding of the client's brief and general accepted practice for environmental consulting.

This report was prepared for RDG with the objective of assessing the presence of potential contamination on the site that could impact on the future development of the property. No warranty, expressed or implied, is made as to the information and professional advice included in this report. The report is not intended for other parties or other uses. Anyone using this document does so at their own risk and should satisfy themselves concerning its applicability and, where necessary, should seek expert advice in relation to the particular situation at the time.

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Figures



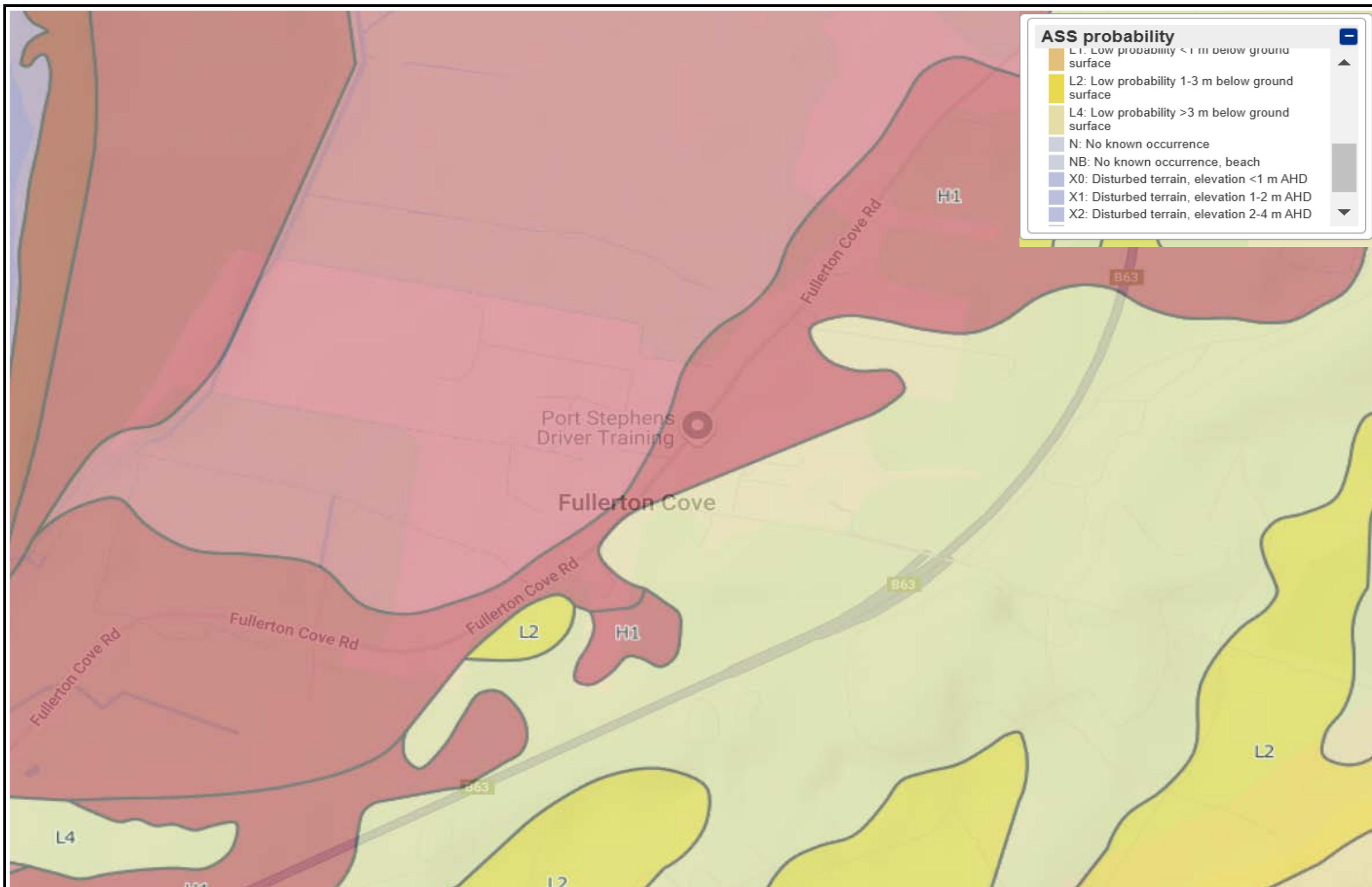
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			REVISION:	1	STATUS:	NFC		
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown					
			DATE:	12/07/2024	FIGURE NUMBER: 1			



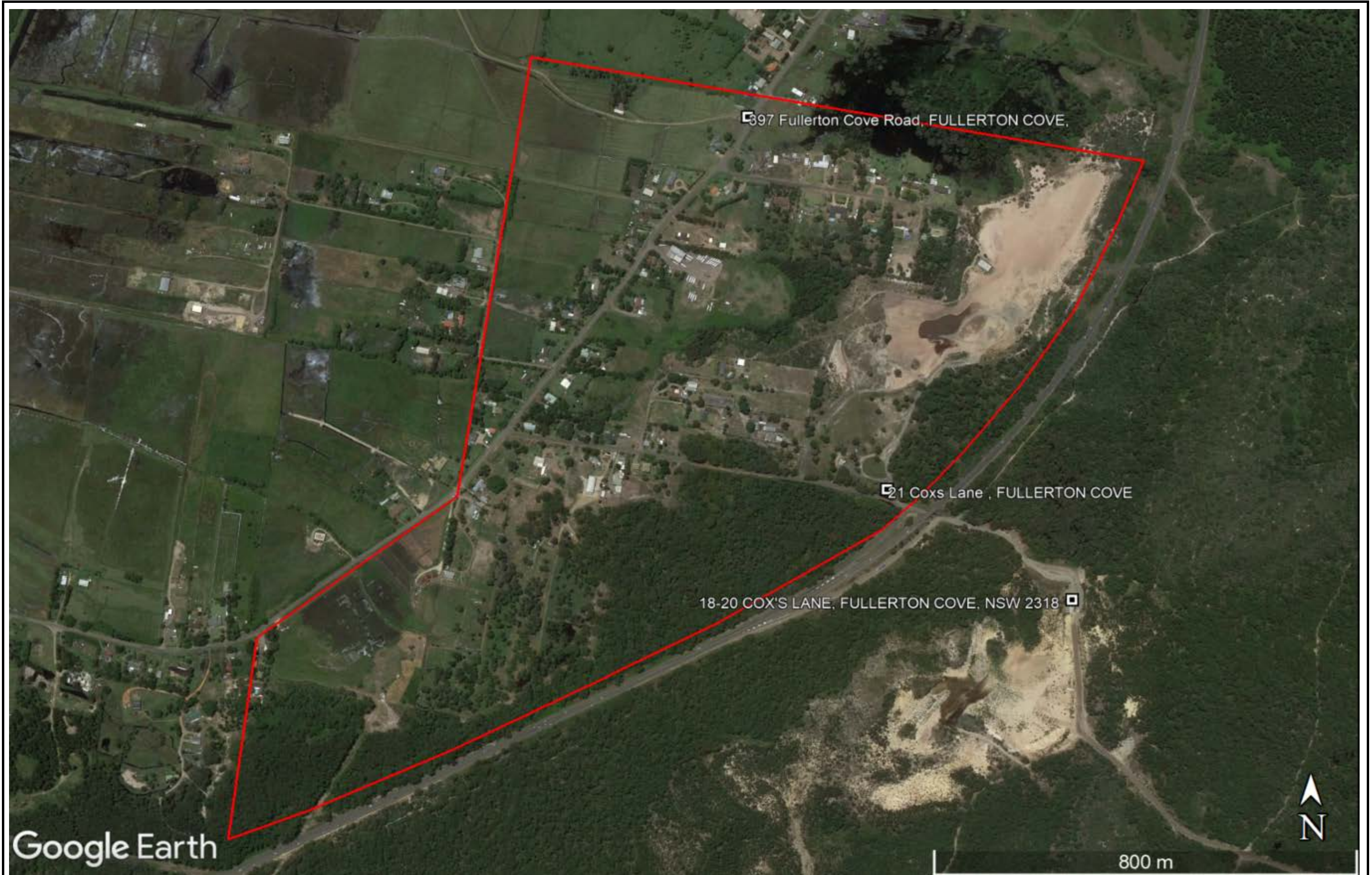
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			REVISION:	1	STATUS:	NFC		
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown					
		DATE:	12/07/2024	FIGURE NUMBER: 2				



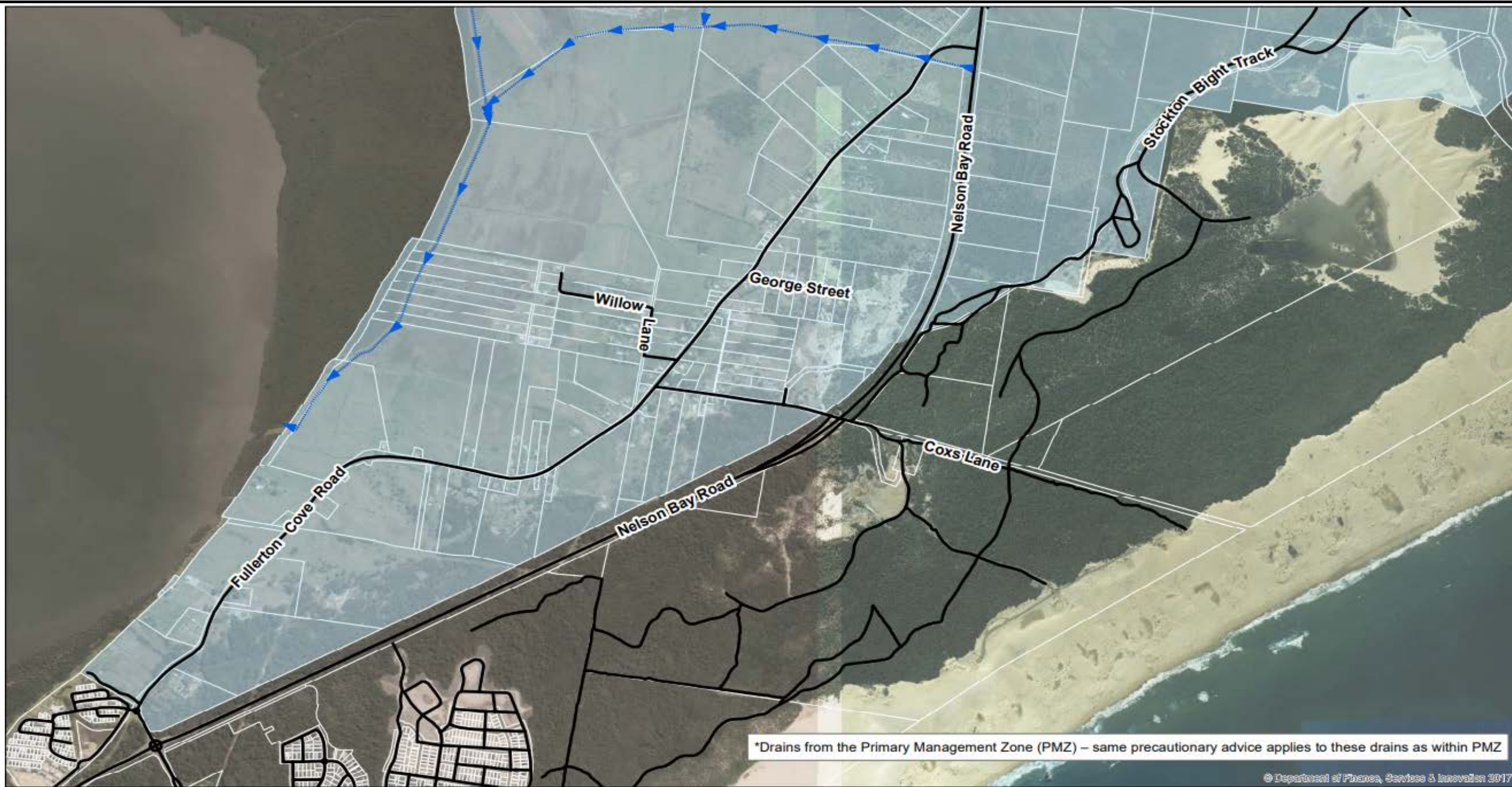
		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc		FIGURE TITLE: PFAS in Soil Sampling Locations	
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				REVISION:	1	STATUS:	NFC		
		PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown					
				DATE:	12/07/2024	FIGURE NUMBER: 3			



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: Acid Sulfate Soil Risk Map
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS:	NFC	
	PROJECT TITLE:	Detailed Site Investigation 21 Coss Lane and 16 Georges Street	SCALE:	As shown			
			DATE:	12/07/2024	FIGURE NUMBER: 5		



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: EPA Registered Facility Location Plan
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS: NFC		
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street		SCALE:	As shown			
			DATE:	12/07/2024	FIGURE NUMBER: 6		



— Roads

▶▶▶ Drains from Primary Management Zone*

Broader Management Zone

Property Boundaries

Williamstown Management Area:
Fullerton Cove

Map Created: 19/12/2017

Copyright NSW Environment Protection Authority.
This map is not guaranteed to be free from error or omission.
EPA and its employees disclaim liability for any act done on the
information in the map and any consequences of such acts or omissions.

Base Imagery: Nearmap 17 November 2017

N

05001,000

Metres

Coordinate System: GDA 1994 MGA Zone 56

		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: PFAS Broader Management Zone
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS:	NFC	
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown				
		DATE:	12/07/2024	FIGURE NUMBER: 7			



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 1953 Aerial Photograph
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS:	NFC	
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown				
		DATE:	12/07/2024				
							FIGURE NUMBER: 8



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 1965 Aerial Photograph
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS:	NFC	
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			DATE:	12/07/2024			
							FIGURE NUMBER: 9



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc		FIGURE TITLE: 1975 Aerial Photograph
			DWG #:	1	DRAWN:	JMc		
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					DATE:	12/07/2024		



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 1983 Aerial Photograph
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		DATE:	12/07/2024				
						FIGURE NUMBER: 11	



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 1992 Aerial Photograph
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			DATE:	12/07/2024	FIGURE NUMBER: 12		



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc		FIGURE TITLE: 2004 Aerial Photograph
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	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown					
			DATE:	12/07/2024	FIGURE NUMBER: 13			



Google Earth

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	CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 2013 Aerial Photograph
		DWG #:	1	DRAWN:	JMc	
		REVISION:	1	STATUS:	NFC	
PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown				
	DATE:	12/07/2024	FIGURE NUMBER: 14			



		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc		FIGURE TITLE: 2018 Aerial Photograph
			DWG #:	1	DRAWN:	JMc		
			REVISION:	1	STATUS:	NFC		
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown					
			DATE:	12/07/2024			FIGURE NUMBER: 16	



Google Earth

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		CLIENT: Roberts Development Group	PROJECT:	JME24089	DESIGNED:	JMc	FIGURE TITLE: 2023 Aerial Photograph
			DWG #:	1	DRAWN:	JMc	
			REVISION:	1	STATUS:	NFC	
	PROJECT TITLE: Detailed Site Investigation 21 Coxs Lane and 16 Georges Street	SCALE:	As shown				
			DATE:	12/07/2024	FIGURE NUMBER: 15		



	CLIENT: Roberts Development Group		PROJECT: JME24089	DESIGNED: JMc	FIGURE TITLE: Sampling Locations
			DWG #: 1	DRAWN: JMc	
			REVISION: 1		
	PROJECT TITLE: Detailed Site Investigation		SCALE: As shown	STATUS: NFC	FIGURE NUMBER: 15
	21 Cocks Lane and 16 Georges Street		DATE: 12/07/2024		

Appendix A

Registered Groundwater Bores

WaterNSW

Work Summary

GW078012

Licence:

Licence Status:

Authorised
Purpose(s):
Intended Purpose(s): DOMESTIC

Work Type: Bore

Work Status:

Construct.Method: Other

Owner Type:

Commenced Date:
Completion Date: 24/11/1992

Final Depth: 7.00 m
Drilled Depth: 7.00 m

Contractor Name: KF & BL GIGGINS PTY LTD

Driller: Kenneth Frank Giggins

Assistant Driller:

Property:

Standing Water Level
(m):

GWMA:
GW Zone:

Salinity Description:
Yield (L/s):

Site Details

Site Chosen
By:

County
Form A: GLOUCESTER

Parish
STOCKTON

Cadastre
DP734906 / LOT
133

Licensed:

Region: 20 - Hunter

CMA Map:

River Basin: - Unknown
Area/District:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:

Northing: 6367959.000
Easting: 390378.000

Latitude: 32°49'15.3"S
Longitude: 151°49'44.1"E

GS Map: -

MGA Zone: 56

Coordinate Unknown
Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.00	200			Auger
1		Annulus	Waterworn/Rounded	1.00	7.00				Graded
1	1	Casing	Pvc Class 6	0.00	7.00	100			Seated on Bottom, Glued

1	1	Opening	Slots - Horizontal	1.50	7.00	100		0	PVC, SL: 5.5mm
---	---	---------	--------------------	------	------	-----	--	---	----------------

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.50	7.00	5.50	Unknown	1.50			7.00		

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.50	0.50	Topsoil	Topsoil	
0.50	1.50	1.00	Sand	Sand	
1.50	7.00	5.50		Unknown	

*** End of GW078012 ***

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW079378

Licence:	Licence Status:
	Authorised Purpose(s):
	Intended Purpose(s):
Work Type: Bore	
Work Status:	
Construct.Method:	
Owner Type:	
Commenced Date:	Final Depth:
Completion Date:	Drilled Depth:
Contractor Name: (None)	
Driller:	
Assistant Driller:	
Property:	Standing Water Level (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

Site Details

Site Chosen By:	County	Parish	Cadastre
	Form A: Licensed:	UNKNOWN	
Region: 20 - Hunter	CMA Map:		
River Basin: - Unknown	Grid Zone:		Scale:
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6366256.000	Latitude: 32°50'10.8"S	
Elevation Source: Unknown	Easting: 390976.000	Longitude: 151°50'06.3"E	
GS Map: -	MGA Zone: 56	Coordinate Source: Unknown	

Remarks

19/10/1999: Form A Remarks:
HUNTER WATER CORPORATION
NORTH STOCKTON
BORE: JCB20
27/11/2009: Reviewed data - nothing to update.

***** End of GW079378 *****

Warning To Clients: This raw data has been supplied to the WaterNSW by drillers, licensees and other sources. WaterNSW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW079779

Licence:	Licence Status:
	Authorised Purpose(s):
	Intended Purpose(s):
Work Type: Bore	
Work Status:	
Construct.Method:	
Owner Type:	
Commenced Date:	Final Depth:
Completion Date:	Drilled Depth:
Contractor Name: (None)	
Driller:	
Assistant Driller:	
Property:	Standing Water Level (m):
GWMA:	Salinity Description:
GW Zone:	Yield (L/s):

Site Details

Site Chosen By:			
	County Form A: GLOUCESTER	Parish STOWELL	Cadastre LTB -WILL2N=023 DPLS
	Licensed:		
Region: 20 - Hunter	CMA Map:		
River Basin: - Unknown	Grid Zone:	Scale:	
Area/District:			
Elevation: 0.00 m (A.H.D.)	Northing: 6365347.000	Latitude: 32°50'40.3"S	
Elevation (Unknown)	Easting: 390927.000	Longitude: 151°50'04.1"E	
Source:			
GS Map: -	MGA Zone: 56	Coordinate Unknown	
		Source:	

Remarks

10/12/1999: Form A Remarks:
Boral County Fullerton Cove Monitoring Bores, Stockton Beach Newcastle
Bore No GW5
30/11/2009: Reviewed data - nothing to update.

***** End of GW079779 *****

Warning To Clients: This raw data has been supplied to the NSW Office of Water by drillers, licensees and other sources. The NOW does not verify the accuracy of this data. The data is presented for use by you at your own risk. You should consider verifying this data before relying on it. Professional hydrogeological advice should be sought in interpreting and using this data.

WaterNSW

Work Summary

GW080079

Licence:	Licence Status:
	Authorised Purpose(s):
	Intended Purpose(s): MONITORING BORE
Work Type: Bore	
Work Status: Instrumented,LT300	
Construct.Method: Jetted - Water	
Owner Type: NSW Office of Water	
Commenced Date: 16/07/2002	Final Depth: 8.57 m
Completion Date: 16/07/2002	Drilled Depth: 8.57 m
Contractor Name: DWR DRILLING - DUBBO	
Driller: Terence Peter Guest	
Assistant Driller:	
Property:	Standing Water Level (m): 1.100
GWMA:	Salinity Description:
GW Zone:	Yield (L/s): 0.160

Site Details

Site Chosen By:			
		County	Parish
		Form A: GLOUCESTER	STOWELL
		Licensed:	Cadastre
			LT1 DP854649
Region: 20 - Hunter		CMA Map: 9232-2N	
River Basin: 210 - HUNTER RIVER		Grid Zone:	Scale:
Area/District:			
Elevation: 2.65 m (A.H.D.)		Northing: 6368630.300	Latitude: 32°48'54.0"S
Elevation R.L. at W.L.M.Pt.		Easting: 391590.700	Longitude: 151°50'30.8"E
Source:			
GS Map: -		MGA Zone: 56	Coordinate Unknown
			Source:

Construction

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	8.57	50			Jetted - Air
1	1	Casing	Pvc Class 12	0.00	7.80	50	40		Other, Glued

1	1	Opening	Screen - Round Wire	7.80	8.40			0	Stainless Steel, Glued, A: 0.15mm
1	1	Opening	Slots - Horizontal	7.80	8.40	50		0	Stainless Steel

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
0.40	8.40	8.00	Unknown	1.10		0.16		01:18:00	269.00

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.40	0.40	Top soil	Topsoil	
0.40	7.00	6.60	Sand - grey	Sand	
7.00	7.50	0.50	Rock - coffee	Rock	
7.50	8.40	0.90	Sand	Sand	
8.40	8.57	0.17	Rock	Rock	

Remarks

24/01/2011: AHD established top casing RL 2.646
23/05/2012: LT300 replaced due to expiration of calibration period. Out: 124625 In: 123941
26/09/2012: Primary Client changed from GWH to GWA on 26/09/2012.
04/03/2016: Primary Client changed from GWA to IPART on 04/03/2016.

*** End of GW080079 ***

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WaterNSW

Work Summary

GW203311

Licence:

Licence Status:

Authorised
Purpose(s):
Intended Purpose(s): STOCK

Work Type: Spear

Work Status: Supply Obtained

Construct.Method: Auger - Hollow

Owner Type: Private

Commenced Date:

Completion Date: 11/03/2015

Final Depth: 7.30 m

Drilled Depth: 7.30 m

Contractor Name: (None)

Driller: Peter James Stewart

Assistant Driller: Blake Stewart

Property:

GWMA:
GW Zone:

Standing Water Level 0.950
(m):

Salinity Description:
Yield (L/s): 2.000

Site Details

Site Chosen
By:

County
Form A: GLOUCESTER
Licensed:

Parish
STOCKTON

Cadastre
32//1183069

Region: 20 - Hunter

CMA Map: 9232-2N

River Basin: 210 - HUNTER RIVER
Area/District:

Grid Zone:

Scale:

Elevation: 0.00 m (A.H.D.)
Elevation Unknown
Source:

Northing: 6368209.000
Easting: 389914.000

Latitude: 32°49'07.0"S
Longitude: 151°49'26.3"E

GS Map: -

MGA Zone: 56

Coordinate Unknown
Source:**Construction**

Negative depths indicate Above Ground Level; C-Cemented; SL-Slot Length; A-Aperture; GS-Grain Size; Q-Quantity; PL-Placement of Gravel Pack; PC-Pressure Cemented; S-Sump; CE-Centralisers

Hole	Pipe	Component	Type	From (m)	To (m)	Outside Diameter (mm)	Inside Diameter (mm)	Interval	Details
1		Hole	Hole	0.00	7.30	154			Auger - Hollow Flight
1		Annulus	Cement	-0.30	0.95	154	60		PL:Pouring/Shovelled
1		Annulus	Waterworn/Rounded	5.60	7.30	154	60		Graded, PL:Pouring/Shovelled
1	1	Casing	Pvc Class 12	-0.30	5.80	60	53		Seated on Bottom, Glued
1	1	Opening	Screen	5.80	7.30	60		0	Stainless Steel, Screwed and Glued, A: 0.50mm

Water Bearing Zones

From (m)	To (m)	Thickness (m)	WBZ Type	S.W.L. (m)	D.D.L. (m)	Yield (L/s)	Hole Depth (m)	Duration (hr)	Salinity (mg/L)
1.40	7.30	5.90	Unknown	0.95	0.30	2.00		02:00:00	

Drillers Log

From (m)	To (m)	Thickness (m)	Drillers Description	Geological Material	Comments
0.00	0.10	0.10	Topsoil, black, loamy	Topsoil	
0.10	0.95	0.85	Clay, stiff, grey, mottley brown	Clay	
0.95	1.40	0.45	Clay, grey, soft	Clay	
1.40	6.00	4.60	Sand, amber, with some organic material, medium grained	Sand	
6.00	7.30	1.30	Sand, sharp, angular, white, coarse grained	Unknown	

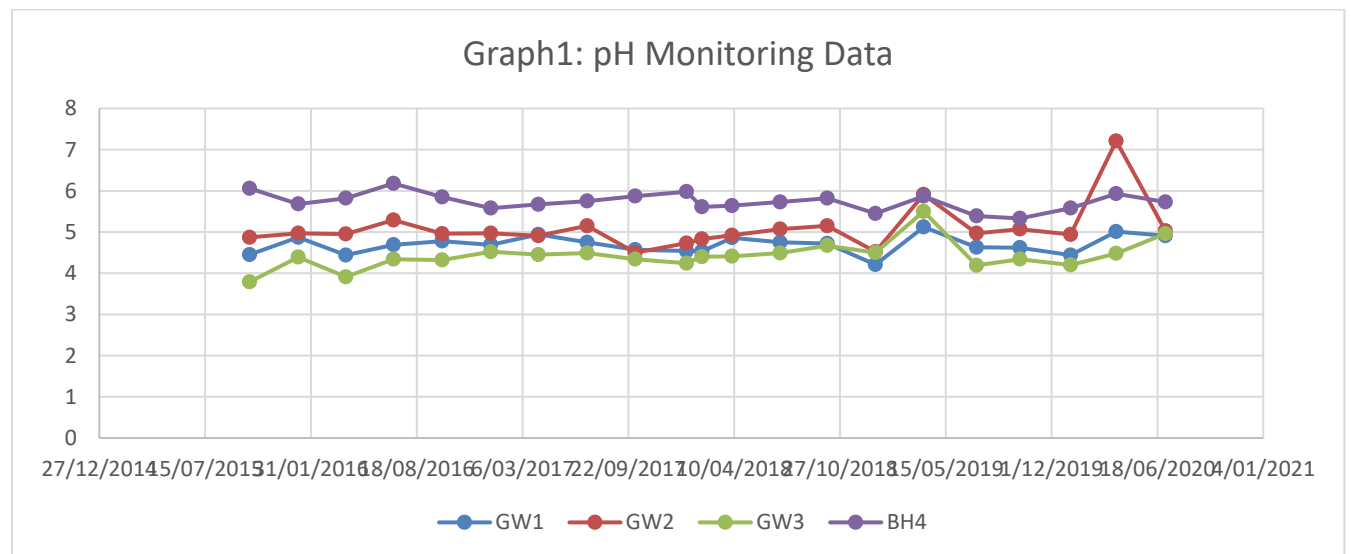
Remarks

11/03/2015: Form A Remarks:
Nat Carling, 11-June-2015; GPS provided on the Form-A.

Appendix B

JME Groundwater Monitoring Data

Coastal Sands Quarry Products
2020-2021 Annual Environmental Management Review



Summary Table 3: Groundwater Monitoring Results July 2020 – June 2021																						
			EPA Monitoring Point 6 - GW1					EPA Monitoring Point 7 – GW2					EPA Monitoring Point 8 – GW3					EPA Monitoring Point 4 - BH4				
Analyte	Units	ADWG	No of samples required	No of samples collected	Min. value	Max. value	Mean value	No of samples required	No of samples collected	Min. value	Max. value	Mean value	No of samples required	No of samples collected	Min. value	Max. value	Mean value	No of samples required	No of samples collected	Min. value	Max. value	Mean value
Arsenic (As)	mg/L	0.01	0	1	<0.001	<0.001	<0.001	0	1	0.002	0.002	0.002	0	1	<0.001	<0.001	<0.001	0	1	0.002	0.002	0.002
Iron (Fe)	mg/L	0.3	0	1	0.33	0.33	0.33	0	1	0.29	0.29	0.29	0	1	<0.05	<0.05	<0.05	0	1	0.81	0.81	0.81
Sulfate (SO ₄)	mg/L	250	0	1	6	6	6	0	1	15	15	15	0	1	5	5	5	0	1	28	28	28
Electrical conductivity	µS/cm	-	0	1	350	350	350	0	1	56.3	56.3	56.3	0	1	86.3	86.3	86.3	0	1	189.6	189.6	189.6
pH	pH	6.5 - 8.5	0	1	4.91	4.91	4.91	0	1	5.03	5.03	5.03	0	1	4.96	4.96	4.96	0	1	5.73	5.73	5.73
Depth of groundwater	mbtoc	-	0	1	5.216	5.216	5.216	0	1	2.598	2.598	2.598	0	1	2.126	2.126	2.126	0	1	2.098	2.098	2.098
Alkalinity	mg/L		0	1	12	12	12	0	1	6	6	6	0	1	6	6	6	0	1	26	26	26
Chloride	mg/L	250	0	1	57	57	57	0	1	11	11	11	0	1	11	11	11	0	1	25	25	25
Sodium (Na)	mg/L	180	0	1	36	36	36	0	1	1	1	1	0	1	7	7	7	0	1	14	14	14
Potassium (K)	mg/L	-	0	1	3	3	3	0	1	<1	<1	<1	0	1	<1	<1	<1	0	1	3	3	3
Calcium (Ca)	mg/L	-	0	1	2	2	2	0	1	6	6	6	0	1	2	2	2	0	1	16	16	16
Magnesium (Mg)	mg/L	-	0	1	4	4	4	0	1	4	4	4	0	1	1	1	1	0	1	3	3	3
Cadmium (Cd)	mg/L	0.002	0	1	<0.0001	<0.0001	<0.0001	0	1	<0.0001	<0.0001	<0.0001	0	1	<0.0001	<0.0001	<0.0001	0	1	<0.0001	<0.0001	<0.0001
Chromium (Cr)	mg/L	0.05	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001
Copper (Cu)	mg/L	2	0	1	0.002	0.002	0.002	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001
Lead (Pb)	mg/L	0.01	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001	0	1	<0.001	<0.001	<0.001
Nickel (Ni)	mg/L	0.02	0	1	0.001	0.001	0.001	0	1	0.001	0.001	0.001	0	1	0.002	0.002	0.002	0	1	<0.001	<0.001	<0.001
Zinc (Zn)	mg/L	3	0	1	<0.005	<0.005	<0.005	0	1	0.02	0.02	0.02	0	1	<0.005	<0.005	<0.005	0	1	<0.005	<0.005	<0.005

mbtoc - metres below top of casing

**Summary Table 4: EPA Monitoring Point 6 - GW1 Groundwater Comparison
July 2012 - July2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Arsenic (As)	mg/L	4	4	0.001	0.002	0.002
2013-2014			4	4	<0.001	0.002	0.002
2014-2015			4	2	0.001	0.001	0.001
2015-2016			4	4	<0.001	<0.001	<0.001
2016-2017			4	4	<0.001	0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2012-2013	Iron (Fe)	mg/L	4	4	0.54	0.76	0.61
2013-2014			4	4	0.67	1.22	0.92
2014-2015			4	2	0.69	0.69	0.69
2015-2016			4	4	0.42	0.75	0.57
2016-2017			4	4	0.30	1.42	0.60
2017-2018			4	4	0.34	0.86	0.57
2018-2019			4	4	0.45	0.77	0.61
2019-2020			4	4	0.18	0.64	0.4
2020-2021			0	1	0.33	0.33	0.33
2012-2013	Sulfate (SO ₄)	mg/L	4	4	3	18	13
2013-2014			4	4	<10	11	-
2014-2015			4	2	18	18	18
2015-2016			4	4	12	28	20
2016-2017			4	4	3	14	-
2017-2018			4	4	<10	22	-
2018-2019			4	4	8	29	20
2019-2020			4	4	<5	36	-
2020-2021			0	1	6	6	6
2012-2013	Electrical conductivity	µS/cm	4	4	210	292	260
2013-2014			4	4	130	250	210
2014-2015			4	2	266	266	270
2015-2016			4	4	117	406	300
2016-2017			4	4	229	339	300
2017-2018			4	4	245	435	356
2018-2019			4	4	290	453	400
2019-2020			4	4	201	489.1	296

Summary Table 4: EPA Monitoring Point 6 - GW1 Groundwater Comparison

July 2012 - July 2021

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2020-2021			0	1	350	350	350
2012-2013	pH		4	4	4.9	5.41	-
2013-2014			4	4	4.86	5.4	-
2014-2015			4	2	5.3	5.3	-
2015-2016			4	4	4.44	4.87	-
2016-2017			4	4	4.69	4.94	-
2017-2018			4	4	4.54	4.86	-
2018-2019			4	4	4.21	5.12	-
2019-2020			4	4	4.44	5.01	-
2020-2021			0	1	4.91	4.91	-
2016-2017	Depth of groundwater	mbtoc	10	10	4.690	5.527	5.132
2017-2018			12	12	4.656	5.601	5.162
2018-2019			12	12	4.780	5.676	5.254
2019-2020			12	12	5.102	5.643	5.347
2020-2021			0	1	5.2146	5.216	5.216
2016-2017	Alkalinity	mg/L	3	3	<1	4	-
2017-2018			4	4	<1	4	-
2018-2019			4	4	<1	4	-
2019-2020			4	4	<1	12	-
2020-2021			0	1	12	12	12
2016-2017	Chloride	mg/L	3	3	62	70	67
2017-2018			4	4	58	111	88
2018-2019			4	4	67	134	106
2019-2020			4	4	58	126	79
2020-2021			0	1	57	57	57
2016-2017	Sodium (Na)	mg/L	3	3	34	49	43
2017-2018			4	4	38	62	54
2018-2019			4	4	49	64	57
2019-2020			4	4	35	64	43
2020-2021			0	1	36	36	36
2016-2017	Potassium (K)	mg/L	3	3	2	4	3
2017-2018			4	4	3	5	4
2018-2019			4	4	3	4	3.8
2019-2020			4	4	1	3	2.5
2020-2021			0	1	3	3	3

**Summary Table 4: EPA Monitoring Point 6 - GW1 Groundwater Comparison
July 2012 - July2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Calcium (Ca)	mg/L	3	3	1	2	1.3
2017-2018			4	4	1	3	2
2018-2019			4	4	2	4	3
2019-2020			4	4	2	4	2.5
2020-2021			0	1	2	2	2
2016-2017	Magnesium (Mg)	mg/L	3	3	4	6	5
2017-2018			4	4	4	9	6.5
2018-2019			4	4	5	11	8.3
2019-2020			4	4	4	10	5.5
2020-2021			0	1	4	4	4
2016-2017	Cadmium (Cd)	mg/L	3	3	<0.0001	<0.0001	<0.0001
2017-2018			4	4	<0.0001	<0.0001	<0.0001
2018-2019			4	4	<0.0001	<0.0001	<0.0001
2019-2020			4	4	<0.0001	<0.0001	<0.0001
2020-2021			0	1	<0.0001	<0.0001	<0.0001
2016-2017	Chromium (Cr)	mg/L	3	3	<0.001	0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	0.001	<0.001
2019-2020			4	4	<0.001	0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Copper (Cu)	mg/L	3	2	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	0.006	-
2018-2019			4	4	<0.001	0.049	-
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	0.002	0.002	0.002
2016-2017	Lead (Pb)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Nickel (Ni)	mg/L	3	3	0.001	0.001	0.001
2017-2018			4	4	<0.001	0.012	-
2018-2019			4	4	<0.001	0.002	-
2019-2020			4	4	<0.001	0.001	<0.001
2020-2021			0	1	0.001	0.001	0.001

Summary Table 4: EPA Monitoring Point 6 - GW1 Groundwater Comparison

July 2012 - July 2021

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Zinc (Zn)	mg/L	3	3	<0.005	0.009	-
2017-2018			4	4	<0.005	0.005	<0.005
2018-2019			4	4	<0.005	<0.005	<0.005
2019-2020			4	4	<0.005	0.019	<0.005
2020-2021			0	1	<0.005	<0.005	<0.005
Notes * Quarry closed 2 November 2014 - 26 June 2015 Quarry ceased operation June 2020							

Summary Table 5: EPA Monitoring Point 7 - GW2 Groundwater Comparison

July 2012 - June 2021

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Arsenic (As)	mg/L	4	4	0.001	0.003	0.002
2013-2014			4	4	0.001	0.003	0.002
2014-2015			4	2	0.001	0.003	0.002
2015-2016			4	4	<0.001	<0.001	<0.001
2016-2017			4	4	0.001	0.004	0.0023
2017-2018			4	4	0.002	0.005	0.003
2018-2019			4	4	0.003	0.003	0.003
2019-2020			4	4	0.003	0.004	0.0035
2020-2021			0	1	0.002	0.002	0.002
2012-2013	Iron (Fe)	mg/L	4	4	1.24	1.68	1.5
2013-2014			4	4	0.94	1.61	1.2
2014-2015			4	2	0.69	1.27	0.98
2015-2016			4	4	0.42	0.75	0.57
2016-2017			4	4	1.03	1.37	1.1
2017-2018			4	4	0.72	1.25	1.0
2018-2019			4	4	0.41	0.95	0.68
2019-2020			4	4	0.08	1.08	0.53
2020-2021			0	1	0.29	0.29	0.29

**Summary Table 5: EPA Monitoring Point 7 - GW2 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Sulfate (SO ₄)	mg/L	4	4	4	10	8.5
2013-2014			4	4	<10	8	-
2014-2015			4	2	8	10	9
2015-2016			4	4	12	28	20
2016-2017			4	4	<10	16	-
2017-2018			4	4	<1	24	-
2018-2019			4	4	<5	16	-
2019-2020			4	4	15	36	24
2020-2021			0	1	15	15	15
2012-2013	Electrical conductivity	µS/cm	4	4	85	90	87
2013-2014			4	4	76	108	93
2014-2015			4	2	78	236	240
2015-2016			4	4	83	100	90
2016-2017			4	4	74	122	93
2017-2018			4	4	58.2	144.2	96.6
2018-2019			4	4	73	854	280
2019-2020			4	4	105	1500	461
2020-2021			0	1	56.3	56.3	56.3
2012-2013	pH		4	4	5.30	5.72	-
2013-2014			4	4	5.34	6.59	-
2014-2015			4	2	5.46	5.81	-
2015-2016			4	4	4.87	5.05	-
2016-2017			4	4	4.91	5.29	-
2017-2018			4	4	4.50	5.15	-
2018-2019			4	4	4.52	5.91	-
2019-2020			4	4	4.94	7.21	
2020-2021			0	1	5.03	5.03	5.03
2016-2017	Depth of groundwater	mbtoc	10	10	2.073	2.850	2.460
2017-2018			12	12	1.994	2.924	2.457
2018-2019			12	12	2.011	3.000	2.554
2019-2020			12	12	2.412	2.953	2.640
2020-2021			0	1	2.598	2.598	2.598

**Summary Table 5: EPA Monitoring Point 7 - GW2 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Alkalinity	mg/L	3	3	4	5	4.3
2017-2018			4	4	4	5	4.5
2018-2019			4	4	4	7	5.3
2019-2020			4	4	4	12	7.7
2020-2021			0	1	6	6	6
2016-2017	Chloride	mg/L	3	3	17	20	19
2017-2018			4	4	17	21	19
2018-2019			4	4	14	20	18
2019-2020			4	4	12	18	16
2020-2021			0	1	11	11	11
2016-2017	Sodium (Na)	mg/L	3	3	10	13	12
2017-2018			4	4	9	12	11
2018-2019			4	4	9	11	10
2019-2020			4	4	8	9	8.3
2020-2021			0	1	1	1	1
2016-2017	Potassium (K)	mg/L	3	3	<1	2	-
2017-2018			4	4	<1	<1	<1
2018-2019			4	4	<1	<1	<1
2019-2020			4	4	<1	1	<1
2020-2021			0	1	<1	<1	<1
2016-2017	Calcium (Ca)	mg/L	3	3	3	4	3.3
2017-2018			4	4	3	5	3.5
2018-2019			4	4	3	4	3.5
2019-2020			4	4	4	5	4.8
2020-2021			0	1	6	6	6
2016-2017	Magnesium (Mg)	mg/L	3	3	2	3	2.3
2017-2018			4	4	2	4	2.8
2018-2019			4	4	2	4	2.8
2019-2020			4	4	4	4	4
2020-2021			0	1	4	4	4
2016-2017	Cadmium (Cd)	mg/L	3	3	<0.0001	<0.0001	<0.0001
2017-2018			4	4	<0.0001	<0.0001	<0.0001
2018-2019			4	4	<0.0001	<0.0001	<0.0001
2019-2020			4	4	<0.0001	<0.0001	<0.0001
2020-2021			0	1	<0.0001	<0.0001	<0.0001

**Summary Table 5: EPA Monitoring Point 7 - GW2 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Chromium (Cr)	mg/L	3	3	<0.001	0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	0.001	<0.001
2019-2020			4	4	<0.001	0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Copper (Cu)	mg/L	3	2	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Lead (Pb)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Nickel (Ni)	mg/L	3	3	0.001	0.002	0.0013
2017-2018			4	4	<0.001	0.002	-
2018-2019			4	4	<0.001	0.001	<0.001
2019-2020			4	4	0.001	0.004	<0.002
2020-2021			0	1	0.001	0.001	0.001
2016-2017	Zinc (Zn)	mg/L	3	3	<0.005	0.012	-
2017-2018			4	4	<0.005	0.02	-
2018-2019			4	4	0.008	0.029	0.016
2019-2020			4	4	0.008	0.027	0.017
2020-2021			0	1	0.002	0.002	0.002
Notes * Quarry closed 2 November 2014 - 26 June 2015 Quarry ceased operation June 2020							

**Summary Table 6: EPA Monitoring Point 8 - GW3 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Arsenic (As)	mg/L	4	4	0.001	0.029	0.001
2013-2014			4	4	<0.001	0.009	0.004
2014-2015			4	2	0.004	0.004	0.004
2015-2016			4	4	<0.001	0.007	0.003
2016-2017			4	4	<0.001	0.002	-
2017-2018			4	4	<0.001	0.003	-
2018-2019			4	4	<0.001	0.006	-
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2012-2013	Iron (Fe)	mg/L	4	4	0.37	17.6	5.6
2013-2014			4	4	0.30	16.5	6.6
2014-2015			4	2	3.77	3.77	3.8
2015-2016			4	4	0.26	5.12	2.5
2016-2017			4	4	0.14	0.42	0.22
2017-2018			4	4	0.10	0.38	0.22
2018-2019			4	4	0.07	4.19	1.14
2019-2020			4	4	0.06	1.04	0.4
2020-2021			0	1	<0.05	<0.05	<0.05
2012-2013	Sulfate (SO ₄)	mg/L	4	4	1	12	8.3
2013-2014			4	4	8.1	14	11
2014-2015			4	2	10	10	10
2015-2016			4	4	10	69	26
2016-2017			4	4	8	15	12
2017-2018			4	4	7	12	9.5
2018-2019			4	4	7	10	8.5
2019-2020			4	4	9	16	12
2020-2021			0	1	5	5	5

**Summary Table 6: EPA Monitoring Point 8 - GW3 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Electrical conductivity	$\mu\text{S}/\text{cm}$	4	4	76	103	92
2013-2014			4	4	70	96	84
2014-2015			4	2	65	80	73
2015-2016			4	4	73.2	133.6	98
2016-2017			4	4	84.4	113.1	90.7
2017-2018			4	4	55	99	82.1
2018-2019			4	4	52	74	64
2019-2020			4	4	82.5	113.7	82.5
2020-2021			0	1	86.3	86.3	86.3
2012-2013	pH		4	4	4.6	5.33	-
2013-2014			4	4	4.81	5.84	-
2014-2015			4	2	5.12	5.3	-
2015-2016			4	4	3.79	4.42	-
2016-2017			4	4	4.32	4.52	-
2017-2018			4	4	4.24	4.49	-
2018-2019			4	4	4.49	5.50	-
2019-2020			4	4	4.19	4.48	-
2020-2021			0	1	4.96	4.96	4.96
2016-2017	Depth of groundwater	mbtoc	10	10	1.615	2.362	1.974
2017-2018			12	12	1.551	2.497	1.999
2018-2019			12	12	1.611	2.574	2.088
2019-2020			12	12	1.914	2.53	2.137
2020-2021			0	1	2.126	2.126	2.126
2016-2017	Alkalinity	mg/L	3	3	<1	<1	<1
2017-2018			4	4	<1	<1	<1
2018-2019			4	4	<1	<1	<1
2019-2020			4	4	<1	10	<4
2020-2021			0	1	6	6	6
2016-2017	Chloride	mg/L	3	1	13	18	15
2017-2018			4	4	14	18	16
2018-2019			4	4	11	22	15
2019-2020			4	4	14	16	14.8
2020-2021			0	1	11	11	11

**Summary Table 6: EPA Monitoring Point 8 - GW3 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Sodium (Na)	mg/L	3	3	8	10	9
2017-2018			4	4	7	10	8.5
2018-2019			4	4	6	12	8.3
2019-2020			4	4	8	9	8.3
2020-2021			0	1	7	7	7
2016-2017	Potassium (K)	mg/L	3	3	<1	2	-
2017-2018			4	4	<1	<1	<1
2018-2019			4	4	<1	<1	<1
2019-2020			4	4	<1	<1	<1
2020-2021			0	1	<1	<1	<1
2016-2017	Calcium (Ca)	mg/L	3	3	1	2	1.7
2017-2018			4	4	2	2	2
2018-2019			4	4	1	2	1.8
2019-2020			4	4	2	2	2
2020-2021			0	1	2	2	2
2016-2017	Magnesium (Mg)	mg/L	3	3	<1	1	<1
2017-2018			4	4	<1	1	<1
2018-2019			4	4	<1	2	-
2019-2020			4	4	1	2	1.8
2020-2021			0	1	1	1	1
2016-2017	Cadmium (Cd)	mg/L	3	3	<0.0001	<0.0001	<0.0001
2017-2018			4	4	<0.0001	<0.0001	<0.0001
2018-2019			4	4	<0.0001	<0.0001	<0.0001
2019-2020			4	4	<0.0001	<0.0001	<0.0001
2020-2021			0	1	<0.0001	<0.0001	<0.0001
2016-2017	Chromium (Cr)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Copper (Cu)	mg/L	3	2	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001

Summary Table 6: EPA Monitoring Point 8 - GW3 Groundwater Comparison

July 2012 - June 2021

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Lead (Pb)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Nickel (Ni)	mg/L	3	3	0.003	0.005	0.004
2017-2018			4	4	0.004	0.006	0.005
2018-2019			4	4	0.001	0.004	0.002
2019-2020			4	4	0.003	0.006	0.004
2020-2021			0	1	0.002	0.002	0.002
2016-2017	Zinc (Zn)	mg/L	3	3	0.005	0.008	0.0063
2017-2018			4	4	<0.005	0.009	-
2018-2019			4	4	<0.005	0.008	-
2019-2020			4	4	0.006	0.012	0.009
2020-2021			0	1	<0.005	<0.005	<0.005

Notes * Quarry closed 2 November 2014 - 26 June 2015 Quarry ceased operation June 2020

Summary Table 7: EPA Monitoring Point 4 - BH4 Groundwater Comparison

July 2012 - June 2021

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Arsenic (As)	mg/L	4	4	0.004	0.012	0.008
2013-2014			4	4	0.004	0.008	0.005
2014-2015			4	2	0.003	0.003	0.003
2015-2016			4	4	0.007	0.017	0.01
2016-2017			4	4	0.004	0.014	0.0088
2017-2018			4	4	0.006	0.014	0.009
2018-2019			4	4	0.004	0.006	0.005
2019-2020			4	4	0.004	0.015	0.007
2020-2021			0	1	0.002	0.002	0.002

**Summary Table 7: EPA Monitoring Point 4 - BH4 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	Iron (Fe)	mg/L	4	4	1.67	1.93	1.8
2013-2014			4	4	0.85	3.94	1.8
2014-2015			4	2	1	1	1.0
2015-2016			4	4	1.36	3.1	2.3
2016-2017			4	4	1.02	2.5	1.8
2017-2018			4	4	0.94	1.49	1.21
2018-2019			4	4	0.46	4.94	1.87
2019-2020			4	4	0.24	1.8	1
2020-2021			0	1	0.81	0.841	0.81
2012-2013	Sulfate (SO ₄)	mg/L	4	4	17	36	25
2013-2014			4	4	4	39	28
2014-2015			4	2	13	17	15
2015-2016			4	4	63	490	180
2016-2017			4	4	20	62	36
2017-2018			4	4	32	46	38
2018-2019			4	4	31	70	51
2019-2020			4	4	2	49	29
2020-2021			0	1	28	28	28
2012-2013	Electrical conductivity	µS/cm	4	4	148	213	180
2013-2014			4	4	132	220	170
2014-2015			4	2	148	213	180
2015-2016			4	4	225	331	280
2016-2017			4	4	170	252	210
2017-2018			4	4	211.3	261	233.4
2018-2019			4	4	168	252	209
2019-2020			4	4	204.5	235.2	219
2020-2021			0	1	189.6	189.6	189.6

**Summary Table 7: EPA Monitoring Point 4 - BH4 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2012-2013	pH		4	4	6.2	6.35	-
2013-2014			4	4	5.78	6.53	-
2014-2015			4	2	6.22	6.72	-
2015-2016			4	4	5.68	6.06	-
2016-2017			4	4	5.58	6.18	-
2017-2018			4	4	5.64	5.98	-
2018-2019			4	4	5.45	5.87	-
2019-2020			4	4	5.33	5.93	-
2020-2021			0	1	5.73	5.73	5.73
2016-2017	Depth of groundwater	mbtoc	10	10	1.565	2.340	1.941
2017-2018			12	12	1.516	2.489	1.977
2018-2019			12	12	1.703	2.545	2.071
2019-2020			12	12	1.835	2.521	2.125
2016-2017	Alkalinity	mg/L	3	3	21	33	29
2017-2018			4	4	24	42	32
2018-2019			4	4	16	37	29
2019-2020			4	4	14	34	24
2020-2021			0	1	26	26	26
2016-2017	Chloride	mg/L	3	3	19	23	20
2017-2018			4	4	20	26	23
2018-2019			4	4	22	31	27
2019-2020			4	4	25	27	26
2020-2021			0	1	25	25	25
2016-2017	Sodium (Na)	mg/L	3	3	13	16	14
2017-2018			4	3	20	26	23
2018-2019			4	4	14	16	15
2019-2020			4	4	14	16	15
2020-2021			0	1	14	14	14
2016-2017	Potassium (K)	mg/L	3	3	2	2	2
2017-2018			4	4	2	3	2.8
2018-2019			4	4	2	3	3
2019-2020			4	4	2	3	2.3
2020-2021			0	1	3	3	3

**Summary Table 7: EPA Monitoring Point 4 - BH4 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Calcium (Ca)	mg/L	3	3	12	29	19
2017-2018			4	4	17	27	23
2018-2019			4	4	18	30	25
2019-2020			4	4	17	20	19
2020-2021			0	1	16	16	16
2016-2017	Magnesium (Mg)	mg/L	3	3	2	3	2.3
2017-2018			4	4	3	4	3.5
2018-2019			4	4	3	6	5
2019-2020			4	4	4	4	4
2020-2021			0	1	3	3	3
2016-2017	Cadmium (Cd)	mg/L	3	3	<0.0001	<0.0001	<0.0001
2017-2018			4	4	<0.0001	<0.0001	<0.0001
2018-2019			4	4	<0.0001	<0.0001	<0.0001
2019-2020			4	4	<0.0001	<0.0001	<0.0001
2020-2021			0	1	<0.0001	<0.0001	<0.0001
2016-2017	Chromium (Cr)	mg/L	3	3	<0.001	0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	0.002	-
2019-2020			4	4	0.002	0.002	0.002
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Copper (Cu)	mg/L	3	2	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Lead (Pb)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	<0.001	<0.001
2019-2020			4	4	<0.001	<0.001	<0.001
2020-2021			0	1	<0.001	<0.001	<0.001
2016-2017	Nickel (Ni)	mg/L	3	3	<0.001	<0.001	<0.001
2017-2018			4	4	<0.001	<0.001	<0.001
2018-2019			4	4	<0.001	0.003	-
2019-2020			4	4	0.001	0.001	0.001
2020-2021			0	1	<0.001	<0.001	<0.001

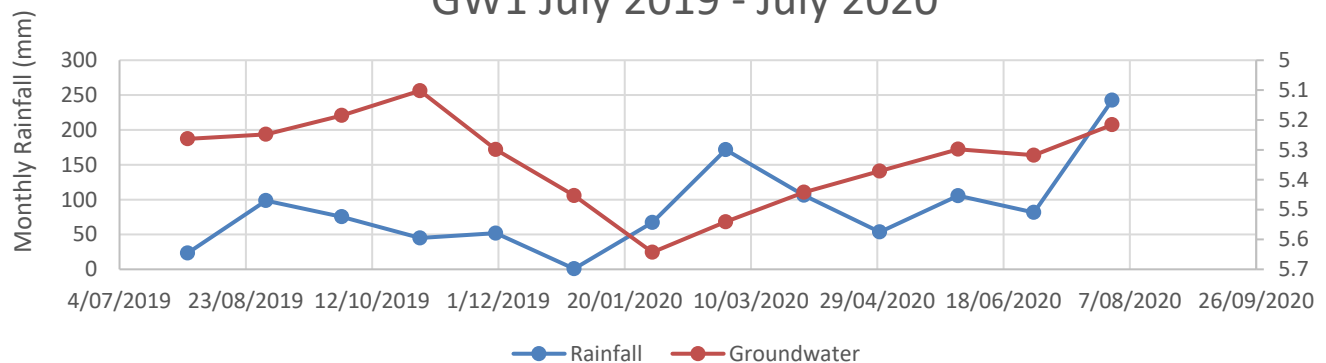
**Summary Table 7: EPA Monitoring Point 4 - BH4 Groundwater Comparison
July 2012 - June 2021**

Reporting period	Analyte	Units	No of samples required	No of samples collected*	Min. value	Max. value	Mean value
2016-2017	Zinc (Zn)	mg/L	3	3	<0.005	<0.005	<0.005
2017-2018			4	4	<0.005	<0.005	<0.005
2018-2019			4	4	0.005	0.08	0.026
2019-2020			4	4	0.012	0.097	0.04
2020-2021			0	1	<0.005	<0.005	<0.005
Notes * Quarry closed 2 November 2014 - 26 June 2015 Quarry ceased operation June 2020							

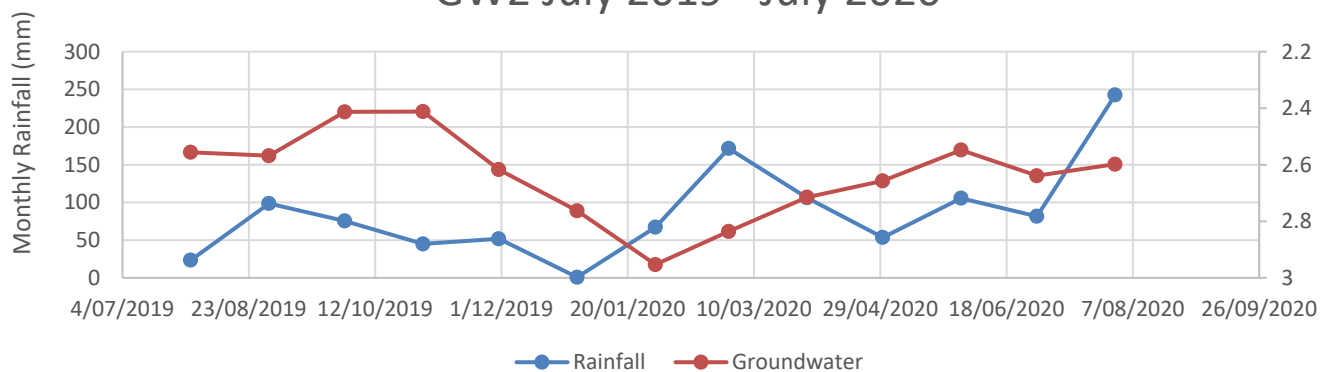
7.1.2 Groundwater Depth

Groundwater depths are compared with monthly rainfall data in Graphs 2 – 5. Groundwater depths appear generally to fluctuate in response to local rainfall variations.

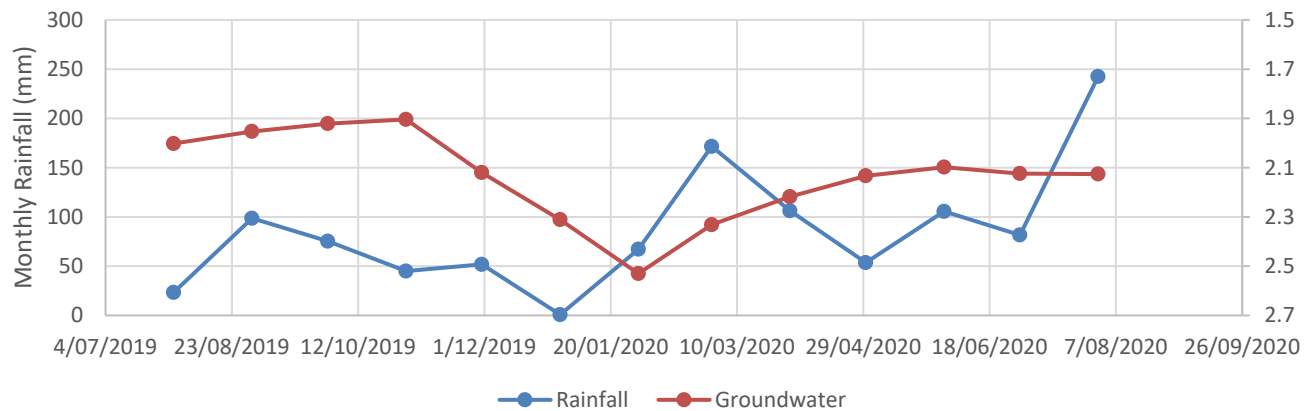
**Graph 2: Groundwater Depth and Monthly Rainfall at
GW1 July 2019 - July 2020**



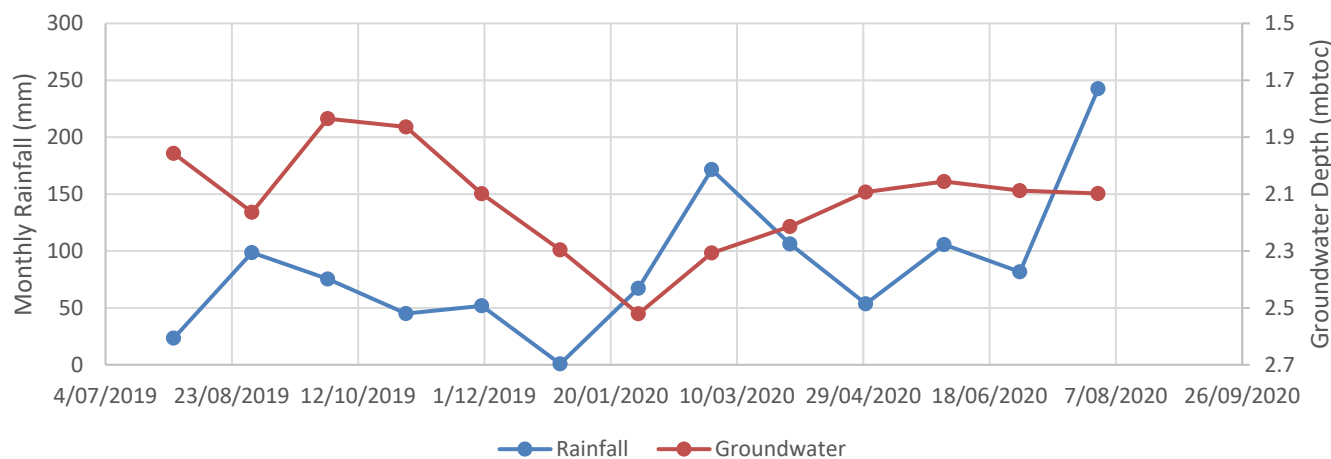
**Graph 3: Groundwater Depth and Monthly Rainfall at
GW2 July 2019 - July 2020**



Graph 4: Groundwater Depth and Monthly Rainfall at
GW2 July 2019 - July 2020



Graph 5: Groundwater Depth and Monthly Rainfall at
BH4 July 2019 - June 2020



7.2 Air Quality Monitoring

7.2.1 Dust Deposition Monitoring

Dust deposition monitoring ceased at the end of the quarry operation.

7.2.2 PM₁₀ Monitoring

PM₁₀ monitoring ceased at the end of the quarry operation.

7.3 Noise Monitoring

Noise monitoring was ceased at the end of the quarry operation.

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288



Appendix C

Section 10.7 Certificate

**PLANNING CERTIFICATE PURSUANT TO
SECTION 10.7 ENVIRONMENTAL PLANNING
AND ASSESSMENT ACT 1979**

APPLICANT DETAILS:

**JM ENVIRONMENTS
37 TOOKE Street
COOKS HILL NSW 2300**

Reference: JME24089

Issue Date: 19/12/2024

PROPERTY DESCRIPTION:

**21 Coxs Lane FULLERTON COVE NSW 2318 Parcel No: 34441
LOT: 1 DP: 1006307**

Disclaimer

Information contained in this certificate relates only to the land for which this certificate is issued on the day it is issued. This information is provided in good faith and Council shall not incur any liability in respect of any such advice. Council relies on state agencies for advice and accordingly can only provide that information in accordance with the advice. Verification of the currency of agency advice should occur. For further information, please contact Council by telephoning (02) 4980 0255 or email plancert@portstephens.nsw.gov.au.

Title Information

Title information shown on this Planning Certificate is provided from Council's records and may not conform to information shown on the current Certificate of Title. Easements, restrictions as to user, rights of way and other similar information shown on the title of the land are not provided on this planning certificate.

Inspection of the land

The Council has made no inspection of the land for the purposes of this Planning Certificate.

PART A: INFORMATION PROVIDED UNDER SECTION 10.7(2)

Matters contained in this certificate apply only to the land on the date of issue.

1. Names of relevant planning instruments and development control plans

- (1) The name of each environmental planning instrument and development control plan that applies to the development on the land.

State Environmental Planning Policies

The relevant chapters of each State Environmental Planning Policy that apply to the land are listed below:

State Environmental Planning Policy (Exempt and Complying Development Codes) 2008
All chapters

State Environmental Planning Policy (Housing) 2021
All chapters

State Environmental Planning Policy (Sustainable Building) 2022
All chapters

State Environmental Planning Policy No 65 – Design Quality of Residential Apartment Development
All chapters

State Environmental Planning Policy (Planning Systems) 2021
Chapter 2 State and regional development
Chapter 4 Concurrences and consents

State Environmental Planning Policy (Precincts - Regional) 2021
Chapter 2 State significant precincts

State Environmental Planning Policy (Primary Production) 2021
Chapter 2 Primary production and rural development

State Environmental Planning Policy (Resources and Energy) 2021
Chapter 2 Mining, petroleum production and extractive industries

State Environmental Planning Policy (Transport and Infrastructure) 2021
Chapter 2 Infrastructure
Chapter 3 Educational establishments and childcare facilities

State Environmental Planning Policy (Resilience and Hazards) 2021
Chapter 3 Hazardous and offensive development
Chapter 4 Remediation of land

State Environmental Planning Policy (Biodiversity and Conservation) 2021
Chapter 3 Koala habitat protection 2020

Local Environmental Plan

Port Stephens Local Environmental Plan 2013

Development Control Plans

The name of each development control plan that applies to the carrying out of development on the land.

Port Stephens Development Control Plan 2014.

- (2) The name of each proposed environmental planning instrument and draft development control plan, which is or has been subject to community consultation or public exhibition under the Act, that will apply to the carrying out of development on the land (unless it has been more than 3 years since the end of the public exhibition period or if the Secretary has notified the council that the making of the proposed instrument has been deferred indefinitely or has not been approved).

Draft State Environmental Planning Policies

No draft State Environmental Planning Policies affect the site the subject of this Certificate.

Draft Local Environmental Plan

Coastal Risk Planning Clause Planning Proposal (PP-2023-2568)

Draft Development Control Plan

No draft development control plan applies to the carrying out of development on the land.

2. Zoning and land use under relevant planning instruments

For each environmental planning instrument or proposed instrument referred to in clause 1 (other than a State Environmental Planning Policy or proposed State Environmental Planning Policy).

a) The identity of the zone –

RU2 Rural Landscape

The land is zoned RU2 Rural Landscape under the provisions of Part 2 in the Port Stephens Local Environmental Plan 2013.

b) The purposes for which development in the zone –

ITEM 2 - May be carried out without development consent

Extensive agriculture; Home occupations; Intensive plant agriculture

ITEM 3 - May be carried out with development consent

Agriculture; Airstrips; Animal boarding or training establishments; Aquaculture; Artisan food and drink industries; Boat launching ramps; Boat sheds; Building identification signs; Business identification signs; Camping grounds; Cellar door premises; Cemeteries; Centre-based child care facilities; Charter and tourism boating facilities; Community facilities; Correctional centres; Crematoria; Dual occupancies; Dwelling houses; Eco-tourist facilities; Environmental facilities; Environmental protection works; Extractive industries; Farm buildings; Flood mitigation works; Forestry; Function centres; Garden centres; Group homes; Helipads; High technology industries; Home-based child care; Home businesses; Home industries; Information and education facilities; Jetties; Landscaping material supplies; Plant nurseries; Recreation areas; Recreation facilities (indoor); Recreation facilities (major); Recreation facilities (outdoor); Research stations; Respite day care centres; Restaurants or cafes; Roads; Roadside stalls; Rural industries; Rural supplies; Secondary dwellings; Tourist and visitor accommodation; Turf farming; Veterinary hospitals; Water recreation structures;

Water supply systems

ITEM 4 - Is prohibited

Backpackers' accommodation; Hotel or motel accommodation; Serviced apartments; Any other development not specified in item 2 or 3

c) Additional permitted uses

No environmental planning instrument applies additional permitted use provisions to this land.

d) Development standards for the erection of a dwelling house

Clause 4.2B in the Port Stephens Local Environmental Plan 2013 includes a development standard that fixes a minimum land dimension for the erection of a dwelling-house. This clause applies to the land. The minimum lot size for the erection of a dwelling-house is identified on the Lot Size Map.

e) Whether the land is an area of outstanding biodiversity value

No, the land is not identified in an area of outstanding biodiversity value under the *Biodiversity Conservation Act 2016*.

f) Whether the land is in a conservation area

The land is not located within a heritage conservation area under the Port Stephens Local Environmental Plan 2013.

g) Whether an item of environmental heritage is located on the land

The land is not identified as containing an item of environmental heritage significance under the provisions in Port Stephens Local Environmental Plan 2013.

3. Contributions Plans

(1) The name of each contributions plan applying to the land

Port Stephens Local Infrastructure Contributions Plan 2020

(2) The land is not in a special contributions area under the Act, Division 7.1.

Note. These documents specify development contributions required towards the cost of providing additional community services or facilities if a property is developed. They are available on request from Council or can be viewed www.portstephens.nsw.gov.au.

4. Complying Development

(1) Whether or not the land to which the certificate relates is land on which complying development may be carried out under *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*?

Housing Code

Complying development under the General Housing Code MAY be carried out on the land.

Inland Code

Complying development under the Inland Code MAY be carried out on the land.

Rural Housing Code

Complying development under the Rural Housing Code MAY be carried out on the land.

Agritourism and Farm Stay Accommodation code

Complying development under the Agritourism and Farm Stay Accommodation Code MAY be carried out on the land.

Low Rise Housing Diversity Code

Complying development under the Low Rise Medium Density Housing Code MAY be carried out on the land.

Greenfield Housing Code

Complying development under the Greenfield Housing Code MAY be carried out on the land.

Housing Alterations Code

Complying development under the Housing Alterations Code MAY be carried out on the land.

General Development Code

Complying development under the General Development Code MAY be carried out on the land.

Industrial and Business Alterations Code

Complying development under the Commercial and Industrial alterations Code MAY be carried out on the land.

Industrial and Business Buildings Code

Complying development under the Commercial and Industrial (New Buildings and Additions) Code MAY be carried out on the land.

Container Recycling Facilities Code

Complying development under the Container Recycling Facilities code MAY be carried out on the land.

Subdivisions Code

Complying development under the Subdivision Code MAY be carried out on the land.

Demolition Code

Complying development under the Demolition Code MAY be carried out on the land.

Fire Safety Code

Complying development under the Fire Safety Code MAY be carried out on the land.

(2) If complying development may not be carried on the land under the above codes, it is because of the provisions of Clauses 1.17A(1)(c) to (e), (2), (3), or (4), 1.18(1)(c3) or 1.19 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

Council does not have sufficient information to ascertain the reason why complying development may not be carried out under the Policy. Contact Councils duty officer on

(02) 4988 0255 for any enquiries relating to the reason why complying development may not be carried out on the land.

(3) If the land is a lot to which the Housing Code, Rural Housing Code, Low Rise Medium Density Housing Code, Greenfield Housing Code, Housing Alterations Code, General Development Code, or Commercial and Industrial (New Buildings and Additions) Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* applies, complying development may be carried out on any part of the lot that is not affected by the provisions of clauses 1.17A(1)(c) to (e), (2), (3) or (4), 1.18(1)(c3) or 1.19 of that Policy.

(4) There are no variations to the exempt development codes under clause 1.12 of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008* in relation to the land.

5. Exempt development

(1) Whether the land is on land which exempt development may be carried out under each of the exempt development codes under the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*.

Division 1 General Code

Exempt development under the General Exempt Development Code MAY be carried out on the land.

Division 2 Advertising and Signage Code

Exempt development under the Advertising and Signage Code MAY be carried out on the land.

Division 3 Temporary Uses and Structures Code

Exempt development under the Temporary Uses and Structures Code MAY be carried out on the land.

Note: Clause 1.16(1)(c) specifies that exempt development must not be carried out on land that is, or on which there is, an item that is listed on the State Heritage Register under the *Heritage Act 1977*, or that is subject to an interim heritage order under that Act
Council does not have sufficient information to ascertain whether the land is listed on the State Heritage Register under the *Heritage Act 1977*, or subject to an interim heritage order under that Act.

Note: If the land is a lot to which the General Code, Advertising and Signage Code, and Temporary Uses Code (within the meaning of the *State Environmental Planning Policy (Exempt and Complying Development Codes) 2008*) applies, exempt development may be carried out on any part of the lot that is not affected by the provisions of clause 1.16(1)(b1)–(d) or 1.16A of that Policy.

6. Affected building notices and building product rectification orders

(1) Whether or not the council is aware that –

a) There is any affected building notice in force in relation to the land

There is no affected building notice in force in respect of the land.

- b) A building product rectification order is in force in relation to the land that has not been fully complied with

No

- c) Any notice of intention to make a building product rectification order has been given in respect of the land and is outstanding.

No

Note: In this section, *affected building notice* has the same meaning as in the *Building Products (Safety) Act 2017*, Part 4. *Building product rectification order* has the same meaning as in the *Building Products (Safety) Act 2017*.

7. Land reserved for acquisition

Whether or not any environmental planning instrument or proposed environmental planning instrument referred to in section 1 makes provision in relation to the acquisition of the land by a public authority, as referred to in Section 3.15 of the *Environmental Planning and Assessment Act 1979 (the Act)*.

The Port Stephens Local Environmental Plan 2013 DOES NOT provide for the acquisition of this land, or part thereof, by a public authority as referred to in Section 3.15 of the Act.

8. Road widening and road realignment

Council's records indicate that the land the subject of this Certificate is not affected by any road widening or road realignment under:- (a) Section 25 of the Roads Act 1993; or (b) any environmental planning instrument; or (c) any resolution of the council.

9. Flood related development controls information

The land or part of the land is between the flood planning area and the probable maximum flood and is subject to flood related development controls. If you wish to apply for a Flood Certificate, please refer to Council's Flood Certificate Information on our website at www.portstephens.nsw.gov.au

10. Council and other public authority policies on hazard risk restrictions

Whether any of the land is affected by an adopted policy that restricts the development of the land because of the likelihood of land slip, bushfire, tidal inundation, subsidence, acid sulfate soils, contamination, aircraft noise, salinity, coastal hazards, sea level rise or another risk (other than flooding or bushfire).

Council HAS NOT adopted a policy or been notified of any adopted policy of another public authority, that restricts development on the land because of the likelihood of landslip, tidal inundation, subsidence, contamination, salinity, coastal hazards or sea level rise.

Council DOES HAVE adopted policies or has been notified of adopted policies of another public authority on matters relating to the risk of acid sulfate soils and aircraft noise.

The information below identifies any adopted policies that apply to the land:

Clause 7.1 Acid Sulfate Soils of the Port Stephens Local Environmental Plan 2013 applies to the land. Acid sulfate soil mapping can be viewed on the NSW Department of Planning, Housing and Infrastructure Spatial Viewer.

NOTE: The absence of a council policy restricting the development of the land by reason of a particular natural hazard does not mean that the risk from that hazard is non-existent.

11. Bush fire prone land

Whether or not some, all, or none of the land is bush fire prone land.

All of the land is identified as bush fire prone land in Council's records. Further details of any applicable restrictions on development of the land may be obtained on application to Council. For further information, please contact Council's Duty Officer by telephoning 49880255.

12. Loose-fill asbestos insulation

Whether or not the land includes any residential premises (as defined in Division 1A of Part 8 of the *Home Building Act 1989*) that are listed on a register of residential premises that contain or have contained loose-fill asbestos insulation.

No, the land does not include any residential dwelling identified on the Loose-Fill Asbestos Insulation Register as containing loose-fill asbestos ceiling insulation. For further information, please contact Department of Fair Trading by telephoning 13 77 88 or go to their website at www.fairtrading.nsw.gov.au.

13. Mine Subsidence

Whether or not the land is proclaimed to be a mine subsidence district, within the meaning of the the *Coal Mine Subsidence Compensation Act 2017*.

No, the land is not within a proclaimed or declared mine subsidence district.

14. Paper subdivision information

- (1) The name of any development plan adopted by a relevant authority that applies to the land or is proposed to be subject to a consent ballot.
- (2) The date of any subdivision order that applies to the land

Not applicable.

15. Property vegetation plans

If the land is land in relation to which a property vegetation plan is approved under Part 4 of the *Native Vegetation Act 2003*, a statement to that effect, but only if the council has been notified of the existence of the plan by the person or body that approved the plan under that Act.

No, Council has not been notified of any property vegetation plans under the Native Vegetation Act 2003 that affect the land to which this certificate applies.

16. Biodiversity stewardship sites

If the land is a biodiversity stewardship site under a biodiversity stewardship agreement under Part 5 of the *Biodiversity Conservation Act 2016*, a statement to that effect ,but only if the council has been notified of the existence of the agreement by the Biodiversity Conservation Trust.

No, Council has not been notified that the land is a biodiversity stewardship site.

Note. Biodiversity stewardship agreements include biobanking agreements under the *Threatened Species Conservation Act 1995*, Part 7A that are taken to be biodiversity stewardship agreements under the *Biodiversity Conservation Act 2016*, Part 5.

17. Biodiversity certified land

If the land is biodiversity certified land under Part 8 of the *Biodiversity Conservation Act 2016*, a statement to that effect.

No, Council has not been notified that the land is biodiversity certified land.

Note. Biodiversity certified land includes land certified under the *Threatened Species Conservation Act 1995*, Part 7AA that is taken to be certified under the *Biodiversity Conservation Act 2016*, Part 8.

18. Orders under *Trees (Disputes Between Neighbours) Act 2006*

Whether an order has been made under the *Trees (Disputes Between Neighbours) Act 2006* to carry out work in relation to a tree on the land (but only if the council has been notified of the order).

The land is NOT affected by an order under the *Trees (Dispute Between Neighbours) Act 2006* (of which Council is aware).

19. Annual charges under *Local Government Act 1993* for coastal protection services that relate to existing coastal protection works

If the *Coastal Management Act 2016* applies to the council, whether the owner, or a previous owner, of the land has given written consent to the land being subject to annual charges under the *Local Government Act 1993*, section 496B, for coastal protection services that relate to existing coastal protection works.

No, the land is not subject to annual charges under section 496B of the *Local Government Act 1993* for coastal protection services relating to existing coastal protection works to which the owner (or any previous owner) of the land has consented.

Note. "existing coastal protection works" are works to reduce the impact of coastal hazards on land (such as seawalls, revetments, groynes and beach nourishment) that existed before the commencement of section 553B of the *Local Government Act 1993*.

20. Western Sydney Aerotropolis

Not applicable to the Port Stephens Local Government Area.

21. Development consent conditions for seniors housing

If *State Environmental Planning Policy (Housing) 2021*, Chapter 3, Part 5 applies to the land, any conditions of a development consent granted after 11 October 2007 in relation to the land that are of the kind set out in that Policy, section 88(2).

Council is unable to provide site-specific information on any conditions of a development consent granted after 11 October 2007 in relation to Clause 88(2) of the *State Environmental Planning Policy (Housing) 2021*, that may apply to the land.

22. Site compatibility certificates and development consent conditions for affordable rental housing

- (1) Whether there is a current site compatibility certificate under *State Environmental Planning Policy (Housing) 2021*, or a former site compatibility certificate (of which Council is aware) in relation to proposed development on the land.

Council is not aware of a current site compatibility certificate issued under *State Environmental Planning Policy (Housing) 2021*.

- (2) If *State Environmental Planning Policy (Housing) 2021*, Chapter 2, Part 2, Division 1 or 5 applies to the land, a statement setting out terms of a kind referred to in the Policy, clause 21(1) or 40(1).

The land is not affected by any terms of a kind (of which Council is aware) referred to in Chapter 2, Part 2, Division 1 or clause 21(1) or 40(1) of *State Environmental Planning Policy (Housing) 2021* in respect of development on the land.

23. Water or sewerage services

If water or sewerage services are, or are to be, provided to the land under the *Water Industry Competition Act 2006*.

No, Council is not aware that water or sewerage services are, or are to be, provided under the *Water Industry Competition Act 2006*.

Additional matters

Note. The following matters are prescribed by section 59 (2) of the Contaminated Land Management Act 1997 as additional matters to be specified in a planning certificate:

- (a) Whether or not the land to which the certificate relates is significantly contaminated land within the meaning of that Act.
- (b) Whether or not the land to which the certificate relates is subject to a management order within the meaning of that Act.
- (c) Whether or not the land to which the certificate relates is the subject of an approved voluntary management proposal within the meaning of the Act.
- (d) Whether or not the land to which this certificate relates is subject to an ongoing maintenance order within the meaning of that Act.
- (e) Whether or not the land to which the certificate relates is the subject of a site audit statement within the meaning of that Act – if a copy of such statement has been provided at any time to the local authority issuing the certificate.

There are no prescribed matters under section 59(2) of the Contaminated Land Management Act 1997 to be disclosed.

PART B: INFORMATION PROVIDED UNDER SECTION 10.7(5)

This information is provided in accordance with section 10.7(5) of the *Environmental Planning and Assessment Act 1979*. Section 10.7(6) states that Council shall not incur any liability in respect of advice provided in good faith pursuant to section 10.7(5) of the Act. If this information is to be relied upon, it should be independently checked.

Heritage

Port Stephens Council must take into consideration the likely effect of proposed development on the heritage significance of a heritage item, heritage conservation area, archaeological site or potential archaeological site, and on its setting, when determining an application for consent to carry out development on land in its vicinity. Please contact Council's Development Assessment and Compliance Section by telephoning 49880255.

Aboriginal Archaeology

When determining a development application on known or potential archaeological sites of both Aboriginal and non-Aboriginal heritage significance, Port Stephens Council must consider an assessment of how the proposed development would affect the conservation of the site and any relic known or reasonably likely to be located at the site. Please contact Council's Development Assessment and Compliance Section on 49880255 for more information.

Aircraft Noise

All areas of the Port Stephens Local Government area may be affected by aircraft noise from time to time. RAAF Base Williamtown – Newcastle Airport and Salt Ash Air Weapons Range are located within the Port Stephens Local Government Area. Further information can be obtained from the Commonwealth Department of Defence website and from the Port Stephens Council Strategy and Environment Section and you are advised to make further enquiries.

Koala Habitat

Parts of the Port Stephens Local government Area are affected by Koala Habitat and subject to the Port Stephens Comprehensive Koala Plan of Management 2002 made under State Environmental Planning Proposal No. 44. Further information can be obtained from Council's Strategy & Environment Section on 49880326 or email plancert@portstephens.nsw.gov.au.

Invasive Species

Parts of the Port Stephens Local Government Area contain plants that pose a risk according to the *Biosecurity Act 2015* which may restrict the use of the land. For further information please contact Council's Strategy & Environment Section on 4988 0326 or email weeds@portstephens.nsw.gov.au

RAAF Base Williamtown PFAS Management Area

The land is within the Williamtown RAAF Base Per- and Poly-Fluoroalkyl Substances (PFAS) Management Area. The Department of Defence is undertaking a long-term environmental investigation and assessment of the Williamtown RAAF Base site and surrounding areas as relates to PFAS contamination.

The NSW Government recommends that residents living inside the Williamtown RAAF Base PFAS Management Area follow precautionary measures to minimise their exposure to PFAS chemicals originating from the RAAF Base. Details of the current precautionary advice is available from the NSW EPA at www.epa.nsw.gov.au or by phoning 131 555.

Coastal Hazards

Coastal Hazards including coastal erosion, tidal inundation, coastal inundation and dune transgression affect parts of the Port Stephens Local Government Area. The land has been identified in the Port Stephens Stage 2 Coastal Hazard Study as having a current or future exposure to a coastal hazard. To further assist in identifying and managing coastal hazards in Coastal Zones Port Stephens Council is preparing a Coastal Management Program. Further information on the Port Stephens Coastal Management Program can be obtained on Council's

website or from Council's Strategy and Environment Section on 4988 0255 or email cmp@portstephens.nsw.gov.au.

Development consents relating to the land

Please contact Customer Relations on (02) 4988 0255, for any enquiries regarding development consent over the land in the past 5 years.

Issued by Port Stephens Council Development Services Group,
on behalf of **Tim Crosdale, General Manager**

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288



Appendix D

EPA Public Register and Website Search

[Home](#) [Public registers](#) [Contaminated land record of notices](#)

Search results

Your search for:Suburb: FULLERTON COVE

did not find any records in our database.

If a site does not appear on the record it may still be affected by contamination. For example:

- Contamination may be present but the site has not been regulated by the EPA under the Contaminated Land Management Act 1997 or the Environmentally Hazardous Chemicals Act 1985.
- The EPA may be regulating contamination at the site through a licence or notice under the Protection of the Environment Operations Act 1997 (POEO Act).
- Contamination at the site may be being managed under the [planning process](#).

More information about particular sites may be available from:

- The [POEO public register](#)
- The appropriate planning authority: for example, on a planning certificate issued by the local council under [section 149 of the Environmental Planning and Assessment Act](#).

See [What's in the record and What's not in the record](#).

If you want to know whether a specific site has been the subject of notices issued by the EPA under the CLM Act, we suggest that you search by Local Government Area only and carefully review the sites that are listed.

This public record provides information about sites regulated by the EPA under the Contaminated Land Management Act 1997, including sites currently and previously regulated under the Environmentally Hazardous Chemicals Act 1985. Your inquiry using the above search criteria has not matched any record of current or former regulation. You should consider searching again using different criteria. The fact that a site does not appear on the record does not necessarily mean that it is not affected by contamination. The site may have been notified to the EPA but not yet assessed, or contamination may be present but the site is not yet being regulated by the EPA. Further information about particular sites may be available from the appropriate planning authority, for example, on a planning certificate issued by the local council under section 149 of the Environmental Planning and Assessment Act. In addition the EPA may be regulating contamination at the site through a licence under the Protection of the Environment Operations Act 1997. You may wish to search the POEO public register:[POEO public register](#)

Search Again

Refine Search

Search TIP

To search for a specific site, search by LGA (local government area) and carefully review all sites listed.

... [more search tips](#)

20 December 2024

For business and industry

For local government

Contact us

131 555 (tel:131555)

Online
(<https://www.epa.nsw.gov.au/about-us/contact-us/feedback>)

info@epa.nsw.gov.au
(mailto:info@epa.nsw.gov.au)

EPA Office Locations
(<https://www.epa.nsw.gov.au/about-us/contact-us/locations>)

[Accessibility \(https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index\)](https://www.epa.nsw.gov.au/about-us/contact-us/website-service-standards/help-index)
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 [twitter \(https://twitter.com/NOW_EPA\)](https://twitter.com/NOW_EPA)
 [youtube \(https://www.youtube.com/channel/UCp2Ht1p1wvN0Wt_EpA\)](https://www.youtube.com/channel/UCp2Ht1p1wvN0Wt_EpA)

Find us on

Number	Name	Location	Type	Status	Issued date
10132	BORAL RESOURCES (NSW) PTY LTD	18-20 COX'S LANE, FULLERTON COVE, NSW 2318	POEO licence	Issued	1-Dec-99
1082387	BORAL RESOURCES (NSW) PTY LTD	18-20 COX'S LANE, FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	14-May-08
1099923	BORAL RESOURCES (NSW) PTY LTD	18-20 COX'S LANE, FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	20-Apr-09
1501486	BORAL RESOURCES (NSW) PTY LTD	18-20 COX'S LANE, FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	13-Dec-11
20084	COASTAL SAND AND QUARRY PRODUCTS PTY LTD	21 Coxs Lane , FULLERTON COVE, NSW 2318	POEO licence	Surrendered	10-Apr-12
1549121	COASTAL SAND AND QUARRY PRODUCTS PTY LTD	21 Coxs Lane , FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	13-Mar-17
1552006	COASTAL SAND AND QUARRY PRODUCTS PTY LTD	21 Coxs Lane , FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	12-May-17
1565147	COASTAL SAND AND QUARRY PRODUCTS PTY LTD	21 Coxs Lane , FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	28-May-18
1575276	COASTAL SAND AND QUARRY PRODUCTS PTY LTD	21 Coxs Lane , FULLERTON COVE, NSW 2318	s.80 Surrender of a Licence	Issued	7-Mar-19
1529292	DART ENERGY LIMITED	397 Fullerton Cove Road, FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	10-Apr-15
3085765091	Fullerton Cove Quarry Pty Ltd	21 Coxs Lane , FULLERTON COVE, NSW 2318	Penalty Notice	Issued	6-Aug-12
1524434	Fullerton Cove Quarry Pty Ltd	21 Coxs Lane , FULLERTON COVE, NSW 2318	s.58 Licence Variation	Issued	28-Oct-14
20347	HUNTER GAS PTY LTD	397 Fullerton Cove Road, FULLERTON COVE, NSW 2318	POEO licence	Surrendered	1-May-14
1566504	HUNTER GAS PTY LTD	397 Fullerton Cove Road, FULLERTON COVE, NSW 2318	s.80 Surrender of a Licence	Issued	16-Aug-18

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288



Appendix E

EPA Fullerton Cove Search

Endorsed Minutes

20 October 2016

Meeting: Williamtown Contamination Investigation Community Reference Group (CRG)

Date: 20 October 2016

Location: Newcastle Airport Boardroom Time: 4.10pm to 6.00pm

Number: 1615

Chairperson: Jodie Calvert | Principal Coordinator | Department of Premier and Cabinet

Secretariat: Cheryl Clarke | Senior Coordination Officer | Department of Premier and Cabinet

Attendees: Marcus Jeffery | Estate and Infrastructure | Department of Defence
 Air Commodore Craig Heap | Department of Defence
 Sarah Davis | Project Officer | Department of Defence
 Dr David Durrheim | Hunter New England Local Health District
 Glenda Briggs | Regional Manager | Department of Primary Industries
 Adam Gilligan Regional Director North | Environment Protection Authority (EPA)
 Karen Marler | A/Manager Hunter Region | EPA
 Evelina Hendry | Senior Stakeholder & Communications Officer | EPA
 Kathy Kent | Department of Human Services
 Mike McIntosh | Port Stephens Council
 Don Burgoyne | NSW Farmer's Association | Community Member & Oyster Farmer
 Phil Blanch | Community Member and Fisher's Representative
 Lyndsay Clout | Fullerton Cove Resident
 Nick Marshall | Salt Ash Community First
 Kim Smith | Salt Ash Community First
 Robert Gauta | Manager, Commercial Fishermen's Coop
 Rhianna Gorfine | President, Williamtown and Surrounds Residents Action Group

Apologies Scot MacDonald | Parliamentary Secretary for Hunter and Central Coast
 Justin Hamilton | Fullerton Cove Action Group & Williamtown Salt Ash Flood Group
 Wayne Wallis | General Manager | Port Stephens Council
 Cornelius Disselkoen | Maria's Vegetable Farm | Community Member
 Andrew Smith | CEO Worimi Local Aboriginal Land Council | Community Member
 Mark Salm | NSW Farmer's Association | Community Member & Oyster Farmer
 Cain Gorfine | Williamtown and Surrounds Residents Action Group

Endorsed Minutes

Number	Action Item	Responsible	Due Date
1615-1	DPC to write to the Office of the Chief Scientist requesting information on Expert Panel's future focus and how best to communicate with the CRG	DPC	4.11.16
1615-2	Defence to provide timeline for Item 2.4 in the CRG Roadmap	Defence	2.11.16
1615-3	Robert Gauta and DPI to provide information on the Campaign stages for distribution to the fishers	Gauta/DPI	2.11.16
1615-4	DPI to provide a copy of the finalised Information Flyer to DPC Chair and Secretariat for circulation to the CRG	DPI/DPC	2.11.16
1615-5	DPI to provide feedback to the Expert Panel re: the inclusion of King Prawn in the seafood dietary table	DPI	28.10.16
1615-6	Defence to consider the CRG community request for a tour of the Lake Cochran Water Treatment Plant	Defence	8.11.16
1615-7	Circulate Commonwealth Health presentation to CRG, when available	DPC	completed
1615-8	Recirculate Fact Sheet on Voluntary Blood Testing program	Defence	2.11.16
1615-9	Defence to provide an update on the Water Reticulation Program at the next CRG meeting	Defence	17.11.16

Endorsed Minutes

Meeting minutes

1. Endorsement of Minutes – 22 September 2016

Amend Fisherman's Coop to Fishermen's Coop

Minutes of 22 September endorsed with amendment.

2. Actions List

1612-3 EPA advised that information on the preliminary sampling activities will be distributed to the community next week by way of letter box drop.

1613-5 Lindsay advised that a decision on release of a US EPA report he referred to in support of Nick Marshall's request for air monitoring has not been made as the Fullerton Cove Group committee has not met since the last CRG meeting. Lindsay considered that the FCG has intellectual property over the document as it was sourced by their researcher. Adam Gilligan requested the name or link to the report given it appears to refute the Expert Panel's view. Lindsay indicated that it was a matter for the EPA and Expert Panel to find relevant reports.

1613-10,15 Marcus Jeffery advised that questions around the establishment of a Future Fund and provision of loans have been escalated within the commonwealth government.

1614-1 (by email) Hunter Water advised that the water reticulation project remains on track for completion by June 2017. Water reticulation in Fullerton Cove is now available with three properties connected; two properties with private pipework installed and awaiting connection; and ten properties having submitted a connection application to Hunter Water. Design work for Salt Ash is complete and tenders for construction of the work have been called.

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Endorsed Minutes

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- whether the new fish dietary advice had replaced the previous post Human Health Risk Assessment recommendations
- the difficulty of needing to consider two separately published sets of tables in order to minimise PFAS exposure
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Health, EPA, DPI and DPC assured the community that this was an extension of existing precautionary closure. Health, also stressed that public health was the first and foremost consideration and that the recent advice adopted a conservative approach based on comprehensive and critical assessment of the data now available.

The fishing industry, DPI, EPA and Health jointly stressed that the seafood advice was a refinement of the existing advice based on detailed review of the HHRA in light of the recently confirmed enHealth Guidelines.

Dr Durrheim also advised that questions regarding seafood dietary advice and concerns around daily intake continue to be asked and answered at community drop-in events.

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DPI to provide feedback to the Expert Panel re: the inclusion of King Prawn in the seafood dietary table.

DPI to provide a copy of the finalised Information Flyer to DPC Chair and Secretariat for circulation to the CRG members.

Dr Matt Taylor gave an update on the current DPI initiatives including the commencement of discussions with Defence and Fishers about further sampling and the depuration studies. Depuration relates to the ability of an animal to remove contaminants over time when not continuing to be exposed to the contaminant. Dr Taylor spoke of the fast depuration rate for prawns and mud crabs. Don noted the fast depuration rate for oysters over 38 hours including a 50% drop in the first 24 hours. A depuration study will shortly commence on dusky flathead. It is expected to take around 2 months followed by physical analysis and data analysis.

4.2 Water Reticulation - outside of Investigation Area (IA)

Lindsay Clout sought information on the progress of town water connections outside of the IA. Marcus Jeffery advised Defence and Hunter Water representatives have met twice since the previous CRG meeting and good progress is being made. Hunter Water has completed design for provision of town water in the Investigation Area and has gone to tender.

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Defence has requested Hunter Water include all properties on Chris and Shady Avenues in Salt Ash where the current IA boundary line splits the street.

In addition Hunter water has provided some initial options to extend the area serviced beyond the IA which the Commonwealth will consider further.

Marcus noted that Defence is working with Hunter Water to consider what would be a reasonable demarcation point if the scope of works was to progress beyond the IA.

Lindsay requested an update at the next CRG meeting.

Defence to provide an update on the Water Reticulation Program at the next CRG meeting

4.3 Lake Cochran Water Treatment Plant (WTP)

The WTP is undergoing an optimisation process and, at this stage, the water is not being released but is circulating back to Lake Cochran. The optimisation process is expected to be completed by early November 2016. The plant is working towards processing up to 70 litres per/second. Lindsay Clout and Nick Marshall requested a tour of the WTP by the CRG. Defence will take the question on notice. The Chair requested Defence consider releasing media as a good news story for the community once the WTP is fully operational.

Defence to consider the CRG community request for a tour of the Lake Cochran Water Treatment Plant

4.4 Commonwealth Department of Health – Walk-In Event

The Commonwealth Department of Health conducted a walk-in event on 14 October 2016. Defence representatives attended. NSW Government agencies did not attend as the session related only to the Commonwealth Government's commitment to the epidemiological study and voluntary blood testing. NSW Health is not involved and has not received any detailed information from the Commonwealth on the epidemiological study. Kim Smith noted that a funding commitment of only 2 years for the study has not instilled confidence in the government's commitment. Dr Durrheim considers the National Centre for Epidemiology and Population Health, Australian National University, is well equipped to conduct the study and Associate Professor Martin Kirk is highly regarded in the field. Dr Durrheim noted that scoping of the study usually occurs in the first six months and it is likely that the project team will engage with community at future walk-in events.

Dr Durrheim noted several concerns with a PFAS cross sectional epidemiological study including significant variation in individual's blood test results, variation in the rates that individual's PFAS levels decrease in their blood and the relatively small community size affected. These factors will complicate interpretation.

Defence advised that the presentation will be available to the community on the Commonwealth Health website following the Oakey Walk-in event.

Circulate Commonwealth Health presentation to CRG, when available

4.5 Moors Drain Functional Assessment

Defence advised that the assessment is completed with the report yet to be provided to Port Stephens Council.

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5. Information Items

5.1 Community Liaison Officers

Kathy Kent advised that she has been working with individual community members. Evelina Hendry advised that she is active talking with community groups such as CWA, Rotary, and providing information and getting feedback for an engagement strategy.

5.2 Site Inspection in Williamtown to Campvale area

A site inspection in the Williamtown to Campvale area of the Tomago Sandbeds was conducted on 23 September 2016 attended by Hunter Water and Salt Ash Community First representatives. The inspection was to groundtruth a desktop study of the potential for contaminated surface water from the RAAF Base to flow overland into Campvale Swamp and then into Campvale Canal. The study relied on topographical information that was derived from aerial LiDAR Survey. The concern of SACF was that the aerial survey may not show all on-ground drainage features. Dr Berghout, Hunter Water, advised that at all locations inspected, it was clear to all parties involved in the inspection that the on-ground situation reflected the LiDAR ground elevation imagery and there was no evidence of surface water flow paths crossing the assumed surface water divide. At the CRG meeting, Nick Marshall advised that he agreed to the expert's definition of drainages, however, he considered that until there was actually water in the particular area, one would not see what happens.

5.3 Property NSW

Port Stephens Council (PSC) has received advice from Property NSW regarding new valuations effective from 1 July 2016. Council is not required to refund rates for the past two rating years. Property NSW has acknowledged that their letter to residents was confusing and has apologised for this confusion. PSC will write to affected residents advising them of the clarification. PSC website will also be updated to clarify this matter.

6 General Business

6.1 Community Walk-in session 2 November 2016

Defence will host two community walk-in sessions at the Murrook Culture Centre - 10am to 1pm and 4pm-7pm. The sessions provide an opportunity to local residents and business owners to ask questions one-on-one with the project team. Defence has invited the Commonwealth Department of Health to participate particularly in relation to the voluntary blood testing program expected to commence in November. NSW agencies confirmed they will be in attendance with possible representation from Hunter Water, Port Stephens Council and Food Authority.

Recirculate Fact Sheet on Voluntary Blood Testing Program

6.2 Out of Sessions Questions

Lindsay Clout noted that the process of responding to questions out of session is working well.

6.3 Further Testing of Oysters

Don Burgoyne noted that he had been in contact with the Food Authority concerning comparative data for oysters in Tilligerry Creek. As they already have the necessary data, no more testing is required and they will monitor the levels.

6.4 Respectful communications

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Rob Gauta requested everyone to be mindful of language and tone when communicating by email and ensure respectful exchanges.

7. Future meetings: The next meeting will be held in one month.

Meeting closed: 6.00pm

Next meeting: The next meeting will be held on 17 November 2016 from 3.30pm to 6.00pm.

Preliminary Groundwater Investigation Results – Williamtown NSW

20 October 2015

Executive Summary

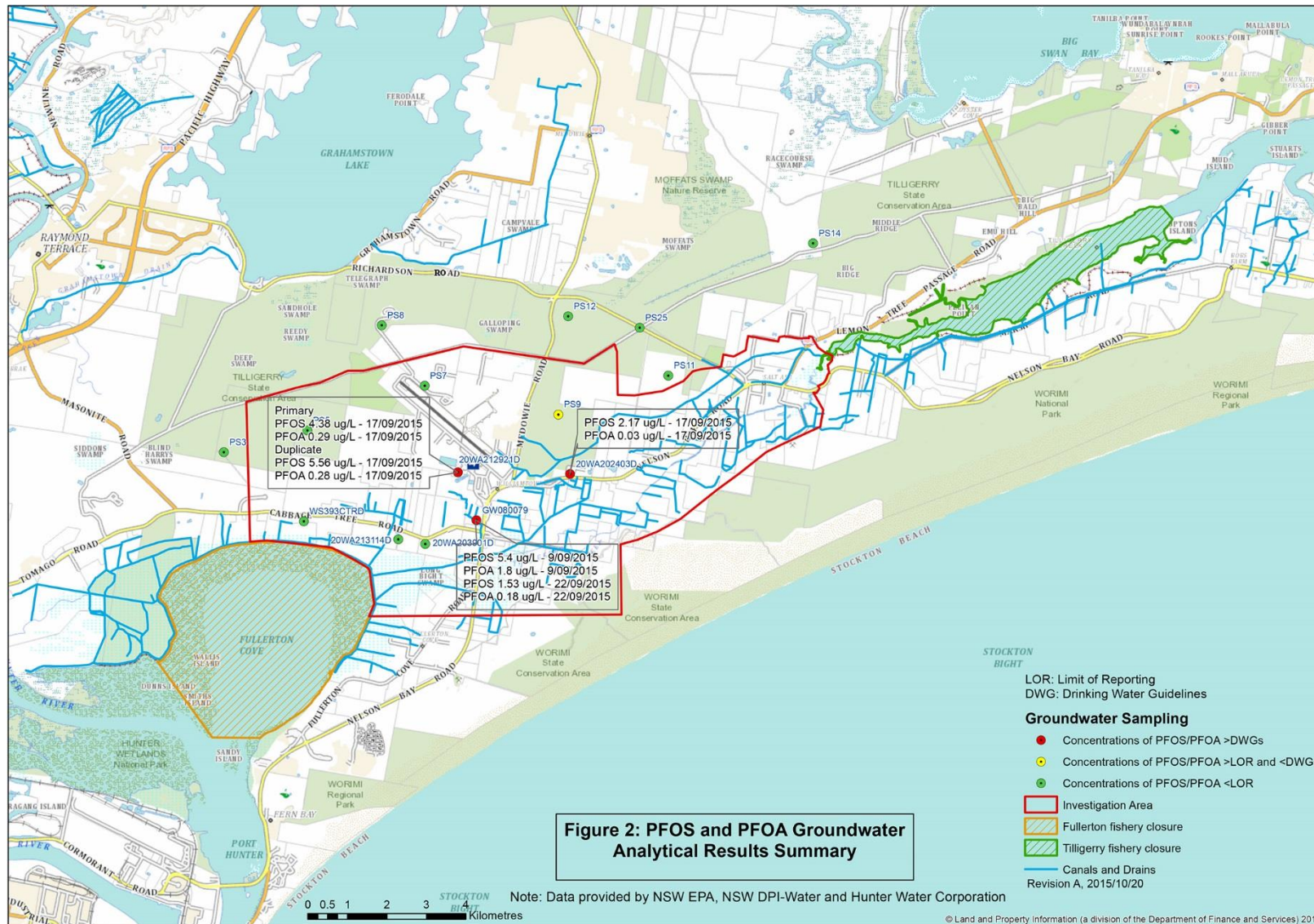
During early September 2015, NSW EPA and NSW DPI Water collected water samples from accessible registered bores within the original Investigation Area. This was done to provide preliminary information about potential exposure pathways of water users within the Investigation Area while awaiting results from the Defence-led sampling of unregistered bores.

Additionally, Hunter Water Corporation provided NSW EPA with a summary of analytical sampling data from selected pump stations within the vicinity of RAAF Williamtown.

In the absence of Australian guideline criteria, bore water results were screened against the United States Environmental Protection Agency (US EPA) Drinking Water Guidelines (DWG) for PFOS (0.2 µg/L) and PFOA (0.4 µg/L).

Bore water sample results are generally consistent with groundwater results reported in the Stage 2 report undertaken by Defence. PFOS concentrations are highest near RAAF Williamtown, and decrease away from the base. Concentrations exceeding the 0.2 µg/L DWG for PFOS were measured in two (2) samples collected adjacent to the base, while PFOS concentrations in three samples collected from properties along Cabbage Tree Road were below the laboratory reporting limit (0.02 µg/L).

A summary of the Groundwater Sampling Data is provided in **Figure 2** over the page.



Preliminary Surface Water Investigation Results – Williamtown NSW

20 October 2015

Executive Summary

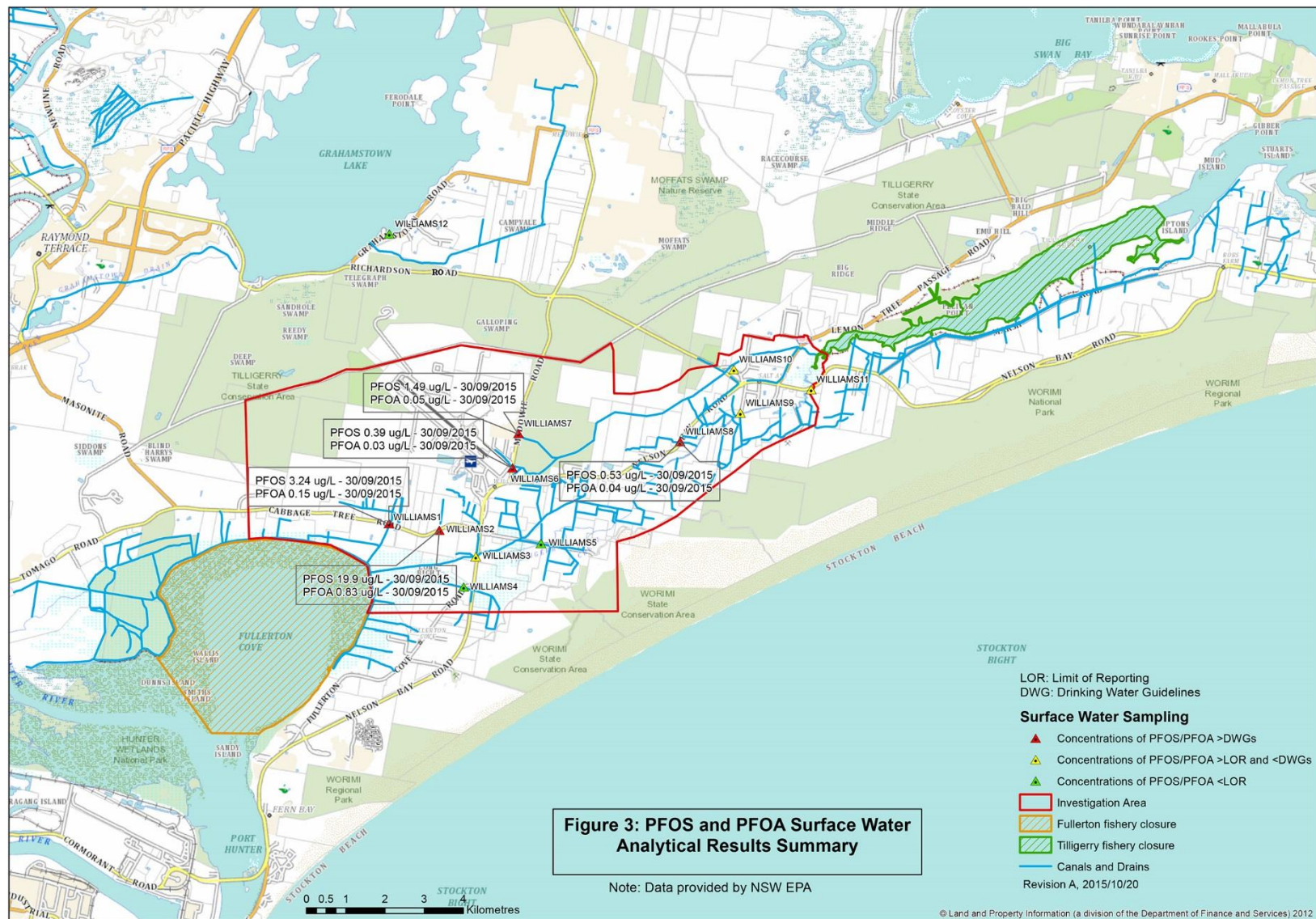
On 29 September 2015, NSW EPA collected surface water samples between the original Investigation Area and the closure areas at Fullerton Cove and Tilligerry Creek. This was done to provide a screening-level assessment of surface water in Tilligerry creek and the regional drain network.

The surface water samples were consistent with the results reported in the Stage 2 report undertaken by Defence, being highest near the base and decreasing at distance. However surface water samples collected by the EPA contained higher PFC concentrations than were reported for the corresponding locations in the Stage 2 report. This includes samples collected near the Tilligerry Creek fisheries closure area which contained PFOS concentrations $>0.1 \mu\text{g/L}$ despite being collected following recent rainfall events (which could dilute concentrations).

Surface water concentrations are likely to be highly variable over time as they are strongly influenced by rainfall events and varying levels of groundwater contributions.

Based on the elevated concentrations of PFOS detected in surface water samples, and the as-yet unexplained detection of PFOS in groundwater near Salt Ash, it was deemed appropriate to extend the water use advisory and investigation areas to their current extent until a clear picture is provided by the sampling program that underlies the Human Health Risk Assessment being conducted by Defence.

A summary of the Surface Water Sampling Data is provided in **Figure 3** over the page.



Drain Clearing Works

Information for local residents

The Office of Environment and Heritage (OEH) is undertaking drain clearing works in the Williamstown area. This is part of the management of the Hunter Valley Flood Mitigation Scheme (HVFMS), which is designed to mitigate and protect the local community from flooding.

What is drain clearing?

Drain clearing is the mechanical removal of weeds from the drain. This involves two stages - the first is to spray the weeds with herbicide a few weeks prior to the works. This makes removing the weeds much easier, and reduces the amount of soil that is disturbed.

The second stage is the actual removal of the weeds using a “reed bucket” with excavation machinery, as shown in the image below.



Once the weeds have been removed, they will be stockpiled for drying. These stockpiles will be inspected regularly during this period, prior to spreading across the area.

What drains are being cleared?

The drains that are part of this program are Dawson's Drain, Fourteen Foot Drain, Ten Foot Drain and Tilligerry Creek drain. Over the

page is a map which highlights in green the sections of these drains that will be cleared.

How long will the work take?

The works are expected to take approximately two months to complete, but this will be dependent upon site conditions encountered during the works.

How will I know if work will be undertaken on my property?

Residents who have drains that contain sections scheduled for clearing will be contacted directly by OEH.

If you are not contacted by OEH, your property will not be impacted or disturbed by the work.

How will this work impact PFAS in the area?

A review by the Science Division in OEH has found that the work is unlikely to have a significant impact on PFAS contamination in the area. Only some sections of the drains will be cleared.

There may be some localised effects such as increased surface water flow through those sections of the drains where works are being undertaken.

The works are being undertaken to improve drainage of surface water in the area. The work will assist in reducing the impacts of local flooding and reduce residents' exposure to PFAS contaminated surface water during periods of high rainfall.

Will an increase in surface water flow mean an increase in PFAS concentrations in seafood, especially those from Fullerton Cove and Tilligerry Creek?

Any increase in surface water flow through these drains is unlikely to have a long-term impact on PFAS concentrations in Fullerton Cove or Tilligerry Creek. This includes PFAS concentrations found in seafood in these locations.

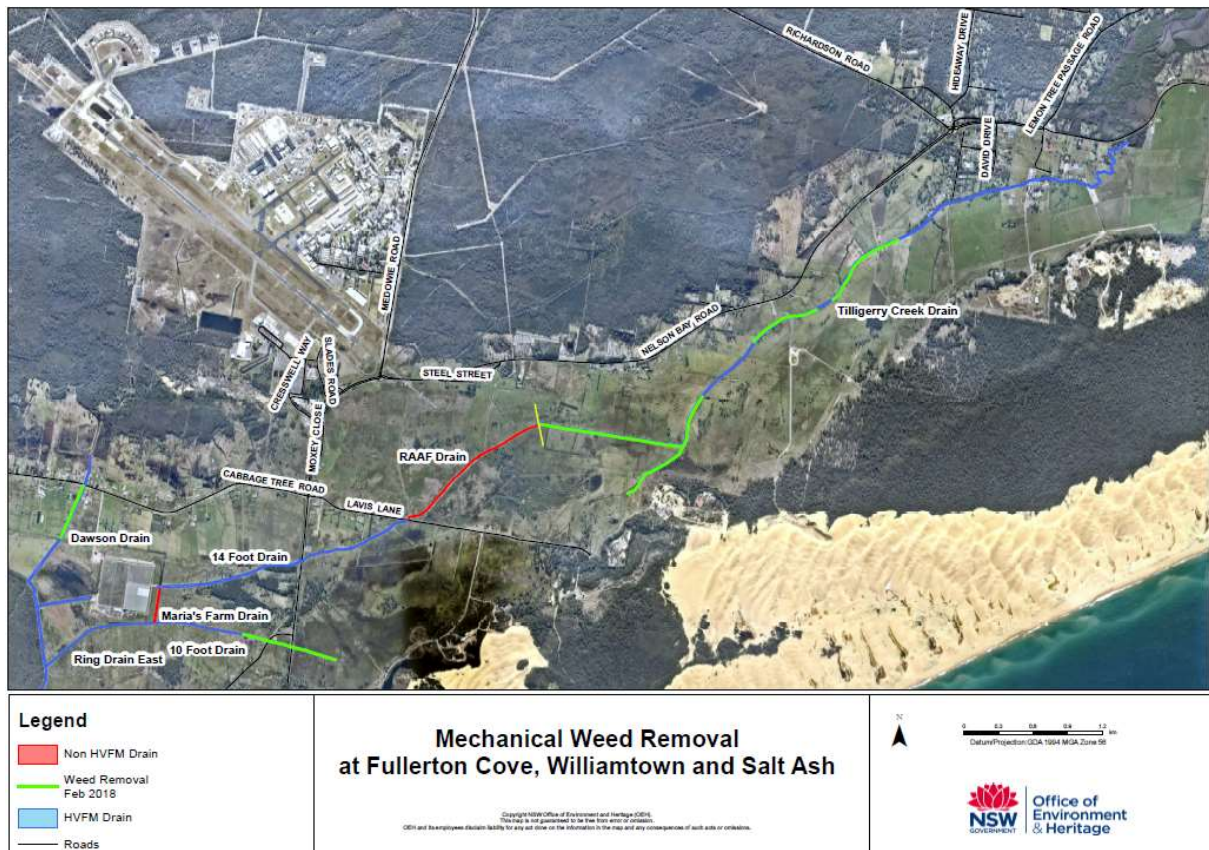
What monitoring will be done during the works?

The NSW Environment Protection Authority (EPA) will be undertaking water sampling during the works. This will allow us to check for any unexpected impacts throughout the process.

Where can I find more information?

More information on PFAS is available at <http://www.epa.nsw.gov.au/media/information/williamtown.htm>

If you have any questions or concerns, call the NSW Environment Line on **131 555**



Foam & chemical contamination in waterways

It is common to find foam in waterways. Foams can be naturally occurring but they may also be an indicator of synthetic chemicals. Natural and synthetic foams look different but they can both collect and concentrate chemicals from the surrounding water, including chemical contaminants. Due to this behaviour, chemical levels in foam can be significantly higher than in the surrounding water.

Cause of foam in waterways

It is not unusual to find foam in water bodies. Foam is produced by 'surfactant' chemicals that produce a thin film floating on the water surface. When this film is agitated by waves, strong currents or wind, the surfactant molecules trap small bubbles, producing foam.

Surfactant chemicals can be natural or synthetic.

Naturally occurring surfactants are a by-product of the breakdown of decaying natural material such as leaves and algae. The foam that occurs as a result of these natural surfactants can start off white in colour but then becomes brown or tan coloured as it collects sediment and organic matter. These natural foams are often seen on windy days or following heavy rain and can persist for some time, gradually disintegrating and disseminating in the surrounding waterway.

Not all foams are naturally occurring. Synthetic surfactants such as

detergents, shampoos and weed killer can be introduced to water bodies by accident or by pollution incident.

Synthetic foams will generally stay bright white in colour. They will often break down faster in the water than natural foam and are likely to appear close to the original source.

Natural foams are typically harmless but synthetic foams can be harmful to aquatic life.

Foam as a concentrating agent

Foams in water can collect and concentrate chemicals from the surrounding environment to much higher levels. This includes chemical contaminants.

One scientific study showed that viruses deliberately injected into sea surf were taken up by bubbles and found at concentrations 200 times higher than in the aerosol droplets created when the bubbles burst.¹

This indicates that as the foam collapses the chemicals trapped in the

bubbles re-enter the surrounding water and become diluted.

Given this known ability for foam to concentrate surrounding chemicals, foams have been used for water purification of a range of contaminants, and are sometimes considered as a clean-up option for contamination incidents in waterways.

Investigating foam in waterways

NSW EPA investigations into pollution incidents may involve the analysis of foam present in a waterway, to determine if it is naturally or chemically occurring foam.

Considerations include the characteristics of the foam such as colour and the period of time in which the foam stays in the waterway.

Chemical contamination in a foam does not necessarily mean that the foam itself is synthetic. EPA analysis of the type of foam (natural or synthetic) considers the known ability for both natural and synthetic foams to concentrate chemicals.

High levels of a chemical in a foam are also not considered to be an indication of the level of contamination in the surrounding environment, due to this known behaviour.

Higher levels of a chemical contaminant in a foam compared to the level in the surrounding water, does not necessarily result in additional risk to human health, if contact is avoided.

Reporting foam pollution

The community plays an important part in protecting the environment. If you see what you believe to be synthetic foam in a waterway, it is important that you inform the EPA Environment Line on 131 555 as soon as possible.



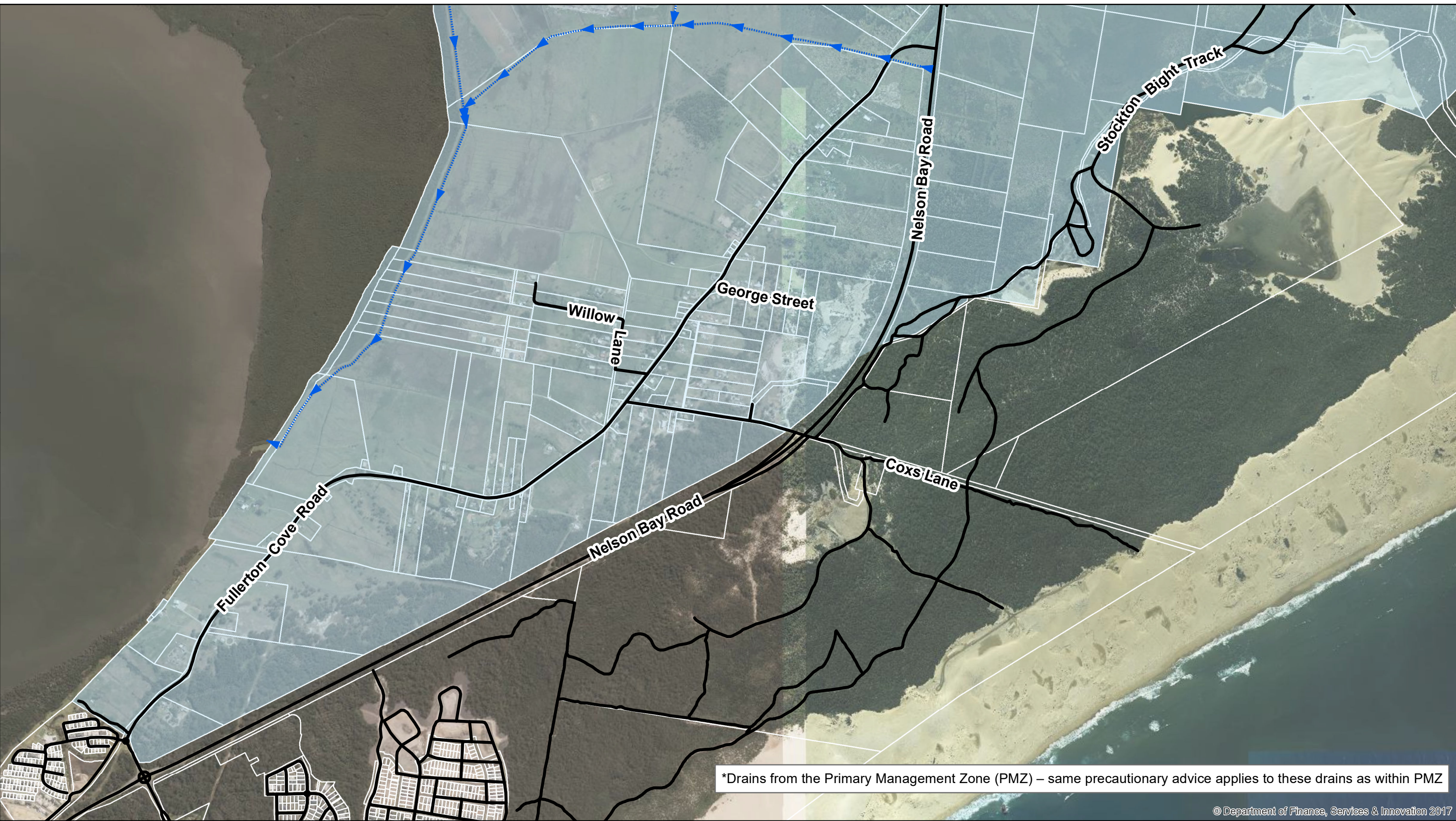
Photo 1. Naturally occurring foam at Nelson Bay Road drain, Williamtown. Photo: NSW EPA.



Photo 2. Synthetic foam found in a canal. Photo: [The Journal](#)

References:

1. Appel, C., Baylor, ER, Baylor, MB, Blanchard, DC and Syzdek, LD (1977) 'Virus transfer from surf to wind'. *Science* 11 Nov 1977: Vol. 198, Issue 4317, pp. 575-580.



*Drains from the Primary Management Zone (PMZ) – same precautionary advice applies to these drains as within PMZ

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Williamstown Management Area: Fullerton Cove

Map Created: 19/12/2017

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This map is not guaranteed to be free from error or omission.
EPA and its employees disclaim liability for any act done on the
information in the map and any consequences of such acts or omissions.

Base imagery: Nearmap 17 November 2017

Roads

Drains from Primary Management Zone*

Broader Management Zone

Property Boundaries

N

0

500

1,000

Metres

Coordinate System: GDA 1994 MGA Zone 56



Endorsed Minutes

20 October 2016

Meeting: Williamtown Contamination Investigation Community Reference Group (CRG)

Date: 20 October 2016

Location: Newcastle Airport Boardroom Time: 4.10pm to 6.00pm

Number: 1615

Chairperson: Jodie Calvert | Principal Coordinator | Department of Premier and Cabinet

Secretariat: Cheryl Clarke | Senior Coordination Officer | Department of Premier and Cabinet

Attendees: Marcus Jeffery | Estate and Infrastructure | Department of Defence
 Air Commodore Craig Heap | Department of Defence
 Sarah Davis | Project Officer | Department of Defence
 Dr David Durrheim | Hunter New England Local Health District
 Glenda Briggs | Regional Manager | Department of Primary Industries
 Adam Gilligan Regional Director North | Environment Protection Authority (EPA)
 Karen Marler | A/Manager Hunter Region | EPA
 Evelina Hendry | Senior Stakeholder & Communications Officer | EPA
 Kathy Kent | Department of Human Services
 Mike McIntosh | Port Stephens Council
 Don Burgoyne | NSW Farmer's Association | Community Member & Oyster Farmer
 Phil Blanch | Community Member and Fisher's Representative
 Lyndsay Clout | Fullerton Cove Resident
 Nick Marshall | Salt Ash Community First
 Kim Smith | Salt Ash Community First
 Robert Gauta | Manager, Commercial Fishermen's Coop
 Rhianna Gorfine | President, Williamtown and Surrounds Residents Action Group

Apologies Scot MacDonald | Parliamentary Secretary for Hunter and Central Coast
 Justin Hamilton | Fullerton Cove Action Group & Williamtown Salt Ash Flood Group
 Wayne Wallis | General Manager | Port Stephens Council
 Cornelius Disselkoen | Maria's Vegetable Farm | Community Member
 Andrew Smith | CEO Worimi Local Aboriginal Land Council | Community Member
 Mark Salm | NSW Farmer's Association | Community Member & Oyster Farmer
 Cain Gorfine | Williamtown and Surrounds Residents Action Group

Endorsed Minutes

Number	Action Item	Responsible	Due Date
1615-1	DPC to write to the Office of the Chief Scientist requesting information on Expert Panel's future focus and how best to communicate with the CRG	DPC	4.11.16
1615-2	Defence to provide timeline for Item 2.4 in the CRG Roadmap	Defence	2.11.16
1615-3	Robert Gauta and DPI to provide information on the Campaign stages for distribution to the fishers	Gauta/DPI	2.11.16
1615-4	DPI to provide a copy of the finalised Information Flyer to DPC Chair and Secretariat for circulation to the CRG	DPI/DPC	2.11.16
1615-5	DPI to provide feedback to the Expert Panel re: the inclusion of King Prawn in the seafood dietary table	DPI	28.10.16
1615-6	Defence to consider the CRG community request for a tour of the Lake Cochran Water Treatment Plant	Defence	8.11.16
1615-7	Circulate Commonwealth Health presentation to CRG, when available	DPC	completed
1615-8	Recirculate Fact Sheet on Voluntary Blood Testing program	Defence	2.11.16
1615-9	Defence to provide an update on the Water Reticulation Program at the next CRG meeting	Defence	17.11.16

Endorsed Minutes

Meeting minutes

1. Endorsement of Minutes – 22 September 2016

Amend Fisherman's Coop to Fishermen's Coop

Minutes of 22 September endorsed with amendment.

2. Actions List

1612-3 EPA advised that information on the preliminary sampling activities will be distributed to the community next week by way of letter box drop.

1613-5 Lindsay advised that a decision on release of a US EPA report he referred to in support of Nick Marshall's request for air monitoring has not been made as the Fullerton Cove Group committee has not met since the last CRG meeting. Lindsay considered that the FCG has intellectual property over the document as it was sourced by their researcher. Adam Gilligan requested the name or link to the report given it appears to refute the Expert Panel's view. Lindsay indicated that it was a matter for the EPA and Expert Panel to find relevant reports.

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DPI to provide feedback to the Expert Panel re: the inclusion of King Prawn in the seafood dietary table.

DPI to provide a copy of the finalised Information Flyer to DPC Chair and Secretariat for circulation to the CRG members.

Dr Matt Taylor gave an update on the current DPI initiatives including the commencement of discussions with Defence and Fishers about further sampling and the depuration studies. Depuration relates to the ability of an animal to remove contaminants over time when not continuing to be exposed to the contaminant. Dr Taylor spoke of the fast depuration rate for prawns and mud crabs. Don noted the fast depuration rate for oysters over 38 hours including a 50% drop in the first 24 hours. A depuration study will shortly commence on dusky flathead. It is expected to take around 2 months followed by physical analysis and data analysis.

4.2 Water Reticulation - outside of Investigation Area (IA)

Lindsay Clout sought information on the progress of town water connections outside of the IA. Marcus Jeffery advised Defence and Hunter Water representatives have met twice since the previous CRG meeting and good progress is being made. Hunter Water has completed design for provision of town water in the Investigation Area and has gone to tender.

Defence has requested Hunter Water include all properties on Chris and Shady Avenues in Salt Ash where the current IA boundary line splits the street.

In addition Hunter water has provided some initial options to extend the area serviced beyond the IA which the Commonwealth will consider further.

Marcus noted that Defence is working with Hunter Water to consider what would be a reasonable demarcation point if the scope of works was to progress beyond the IA.

Lindsay requested an update at the next CRG meeting.

Defence to provide an update on the Water Reticulation Program at the next CRG meeting

4.3 Lake Cochran Water Treatment Plant (WTP)

The WTP is undergoing an optimisation process and, at this stage, the water is not being released but is circulating back to Lake Cochran. The optimisation process is expected to be completed by early November 2016. The plant is working towards processing up to 70 litres per/second. Lindsay Clout and Nick Marshall requested a tour of the WTP by the CRG. Defence will take the question on notice. The Chair requested Defence consider releasing media as a good news story for the community once the WTP is fully operational.

Defence to consider the CRG community request for a tour of the Lake Cochran Water Treatment Plant

4.4 Commonwealth Department of Health – Walk-In Event

The Commonwealth Department of Health conducted a walk-in event on 14 October 2016. Defence representatives attended. NSW Government agencies did not attend as the session related only to the Commonwealth Government's commitment to the epidemiological study and voluntary blood testing. NSW Health is not involved and has not received any detailed information from the Commonwealth on the epidemiological study. Kim Smith noted that a funding commitment of only 2 years for the study has not instilled confidence in the government's commitment. Dr Durrheim considers the National Centre for Epidemiology and Population Health, Australian National University, is well equipped to conduct the study and Associate Professor Martin Kirk is highly regarded in the field. Dr Durrheim noted that scoping of the study usually occurs in the first six months and it is likely that the project team will engage with community at future walk-in events.

Dr Durrheim noted several concerns with a PFAS cross sectional epidemiological study including significant variation in individual's blood test results, variation in the rates that individual's PFAS levels decrease in their blood and the relatively small community size affected. These factors will complicate interpretation.

Defence advised that the presentation will be available to the community on the Commonwealth Health website following the Oakey Walk-in event.

Circulate Commonwealth Health presentation to CRG, when available

4.5 Moors Drain Functional Assessment

Defence advised that the assessment is completed with the report yet to be provided to Port Stephens Council.

Endorsed Minutes

5. Information Items

5.1 Community Liaison Officers

Kathy Kent advised that she has been working with individual community members. Evelina Hendry advised that she is active talking with community groups such as CWA, Rotary, and providing information and getting feedback for an engagement strategy.

5.2 Site Inspection in Williamstown to Campvale area

A site inspection in the Williamstown to Campvale area of the Tomago Sandbeds was conducted on 23 September 2016 attended by Hunter Water and Salt Ash Community First representatives. The inspection was to groundtruth a desktop study of the potential for contaminated surface water from the RAAF Base to flow overland into Campvale Swamp and then into Campvale Canal. The study relied on topographical information that was derived from aerial LiDAR Survey. The concern of SACF was that the aerial survey may not show all on-ground drainage features. Dr Berghout, Hunter Water, advised that at all locations inspected, it was clear to all parties involved in the inspection that the on-ground situation reflected the LiDAR ground elevation imagery and there was no evidence of surface water flow paths crossing the assumed surface water divide. At the CRG meeting, Nick Marshall advised that he agreed to the expert's definition of drainages, however, he considered that until there was actually water in the particular area, one would not see what happens.

5.3 Property NSW

Port Stephens Council (PSC) has received advice from Property NSW regarding new valuations effective from 1 July 2016. Council is not required to refund rates for the past two rating years. Property NSW has acknowledged that their letter to residents was confusing and has apologised for this confusion. PSC will write to affected residents advising them of the clarification. PSC website will also be updated to clarify this matter.

6 General Business

6.1 Community Walk-in session 2 November 2016

Defence will host two community walk-in sessions at the Murrook Culture Centre - 10am to 1pm and 4pm-7pm. The sessions provide an opportunity to local residents and business owners to ask questions one-on-one with the project team. Defence has invited the Commonwealth Department of Health to participate particularly in relation to the voluntary blood testing program expected to commence in November. NSW agencies confirmed they will be in attendance with possible representation from Hunter Water, Port Stephens Council and Food Authority.

Recirculate Fact Sheet on Voluntary Blood Testing Program

6.2 Out of Sessions Questions

Lindsay Clout noted that the process of responding to questions out of session is working well.

6.3 Further Testing of Oysters

Don Burgoyne noted that he had been in contact with the Food Authority concerning comparative data for oysters in Tilligerry Creek. As they already have the necessary data, no more testing is required and they will monitor the levels.

6.4 Respectful communications

Endorsed Minutes

Rob Gauta requested everyone to be mindful of language and tone when communicating by email and ensure respectful exchanges.

7. Future meetings: The next meeting will be held in one month.

Meeting closed: 6.00pm

Next meeting: The next meeting will be held on 17 November 2016 from 3.30pm to 6.00pm.



Surface Water – PFOS Analytical Results Summary – Fullerton Cove, NSW

3 June 2016

Executive Summary

The NSW EPA has examined surface drains around Fullerton Cove for PFC concentrations (including PFOS and PFOA). Samples were collected from the Fullerton Cove ring drain, the 10' and 14' drains, and other drains in January and May 2016.

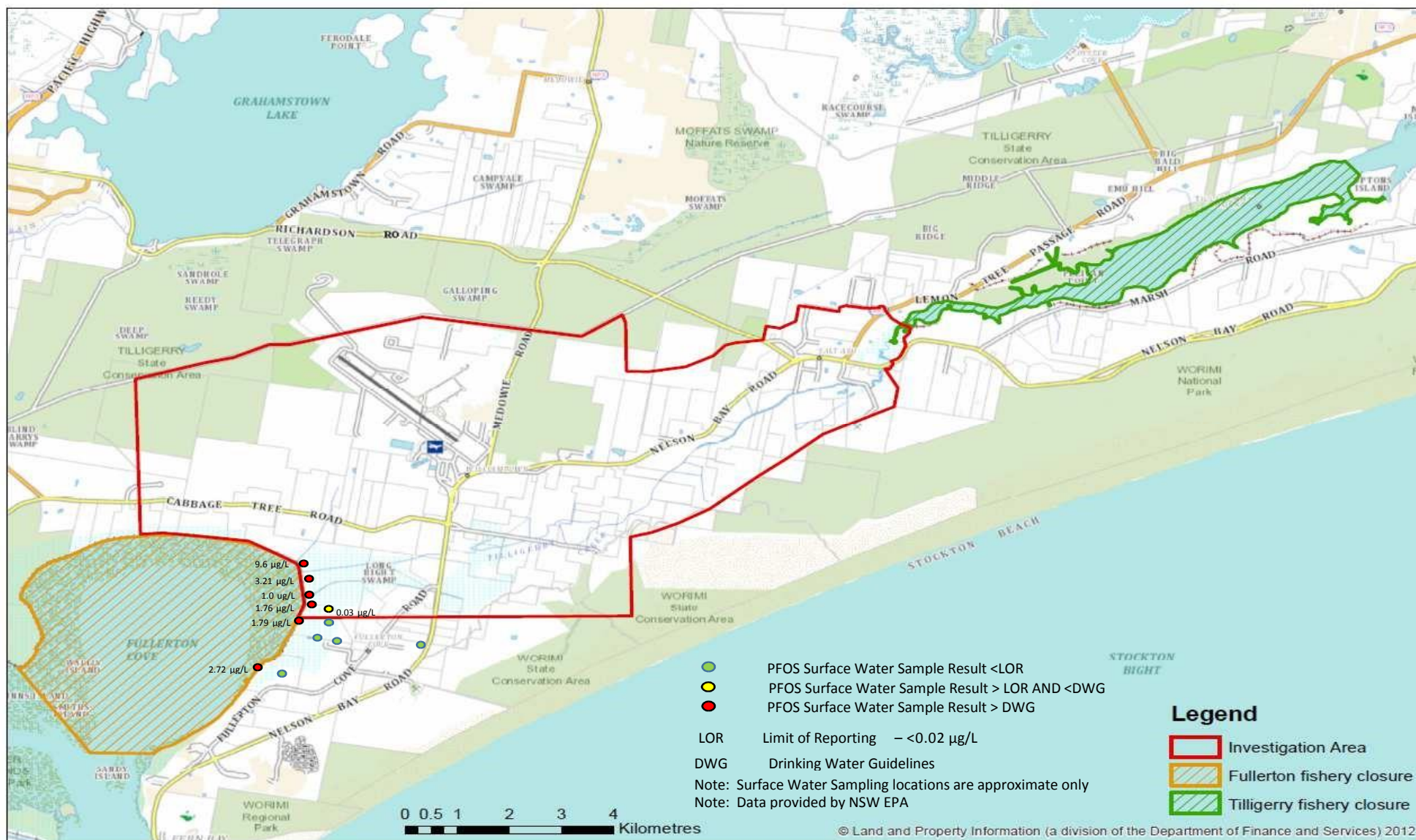
Neither PFOS nor PFOA were detected in any sample collected outside the Investigation Area (laboratory detection limit = 0.02 µg/L). PFOS was detected in samples collected within the Investigation Area, including the Fullerton Cove ring drain.

The two samples with positive detections along the Fullerton Cove ring drain are considered part of the Investigation Area.

The EPA requests that residents within the Williamstown Investigation Area continue to observe the water use advisory. This includes: not drinking or preparing food from private water bores, or water from dams, ponds or creeks in the Investigation Area.

The NSW Government will re-evaluate the water use advisory and the Investigation Area boundary following the release of Department of Defence investigation results

Surface Water – PFOS Analytical Results Summary – January and May 2016



Williamtown PFAS Investigation - update

Information for local residents and businesses

The investigation into PFAS contamination in the area surrounding the RAAF Base Williamtown is now complete, and the NSW Government is in a position to provide long-term advice to the community to reduce potential exposure to PFAS. This follows a review of the Department of Defence's draft Human Health Risk Assessment (HHRA) by the Williamtown Expert Panel, led by the NSW Chief Scientist & Engineer Professor Mary O'Kane AC. The review of the latest data has resulted in some changes.

What is the Human Health Risk Assessment?

The draft Human Health Risk Assessment (HHRA) examines possible pathways for human health exposure to PFAS arising from contamination at the Williamtown RAAF Base. This includes possible exposure through ground, surface and bore water through activities such as drinking and swimming, and through consumption of food such as home-slaughtered meat, poultry, eggs, milk, fruit and vegetables.

This report was undertaken after the NSW Government requested further, detailed studies to fill data gaps.

The Department of Defence recently provided the NSW Government with a draft Environmental Site Assessment (ESA) and Human Health Risk Assessment (HHRA) after we requested they undertake further, detailed studies to identify data gaps.

The Williamtown Expert Panel, led by the NSW Chief Scientist & Engineer Professor Mary O'Kane AC, has completed a review of the latest data which has resulted in some changes.

Is the Investigation Area changing?

Yes. The boundaries of the Investigation Area, now known as the Management Area, will comprise three zones. This has seen a reduction in some areas and an expansion in other areas including Fullerton Cove and additional parts of Salt Ash.

There is now a Primary Management Zone, Secondary Management Zone and Broader Management Zone. Each zone has tailored precautionary advice for residents to minimise

exposure to PFAS originating from the RAAF Base Williamtown.

The Primary Management Zone has significantly higher levels of PFAS detected and therefore, the strongest advice applies.

The zones have been mapped and can be viewed on the EPA website

www.epa.nsw.gov.au/MediaInformation/williamtown.htm.

Is the precautionary advice changing?

Yes. Although the precautionary advice in place since 2015 remains largely unchanged, it is tailored for residents depending on location. The advice continues to be precautionary in nature because the effects of PFAS are still unclear.

Importantly, reticulated water (often referred to as town water) is safe to drink across all zones.

What is the advice for people living in the Primary Management Zone?

- It is SAFE to drink water from the reticulated supply (town water)
- Groundwater, bore water and surface water should NOT be used for ANY PURPOSE
- Additionally, DO NOT do anything with groundwater, bore water or surface water (including in creeks and drains) that might lead to incidental ingestion (swallowing)
- Home grown foods produced in this zone should NOT be consumed. This includes home-slaughtered meat, poultry, eggs, milk, fruit and vegetables should NOT be consumed
- The existing dietary advice for fish and seafood remains appropriate.

What is the advice for people living in Secondary and Broader Management Zones?

- It is SAFE to drink water from the reticulated supply (town water).
- Do NOT use groundwater, bore water or surface water for drinking or cooking
- AVOID swallowing groundwater or surface water when bathing, showering, swimming and paddling (including in creeks and drains). Groundwater and surface water should NOT be used for swimming or paddling pools
- AVOID eating home grown food produced in this zone – including home-slaughtered meat, eggs, milk, poultry, fruit and vegetables
- The existing dietary advice for fish and seafood remains appropriate.

Why is there a distinction between the Secondary and Broader Management Zone?

The Secondary Management Zone has some detected levels of PFAS. The topography and hydrology of the Broader Management Zone means PFAS detections could occur now and into the future.

What does this mean for residents and local businesses?

Following your tailored advice is recommended to reduce your potential exposure to PFAS.

Are my pets safe?

There are no proven adverse effects on animals from drinking water that may have been exposed to PFAS. If you would like to minimise your pet's exposure, it is recommended that you use an alternative water supply, other than ground, surface or bore water for drinking. This is also advised when washing your animals to reduce the risk of them swallowing water during the process.

Can I sell any produce produced there to market?

Yes. There is no domestic or international limits for PFAS in food, nor any restrictions on sale or movement of primary produce. In Australia, the general community's exposure to PFAS is low and declining as most people source their food from a wide variety of types

and locations and any PFAS levels that may be present in one source are diluted.

People living in affected areas are being advised to minimise their exposure. This is because people living in these areas are exposed to higher levels of PFAS and may be regular consumers of these products from this location.

What will happen next?

It is the NSW Government's understanding that Defence will release the final reports in the coming weeks, and will undertake their own community engagement.

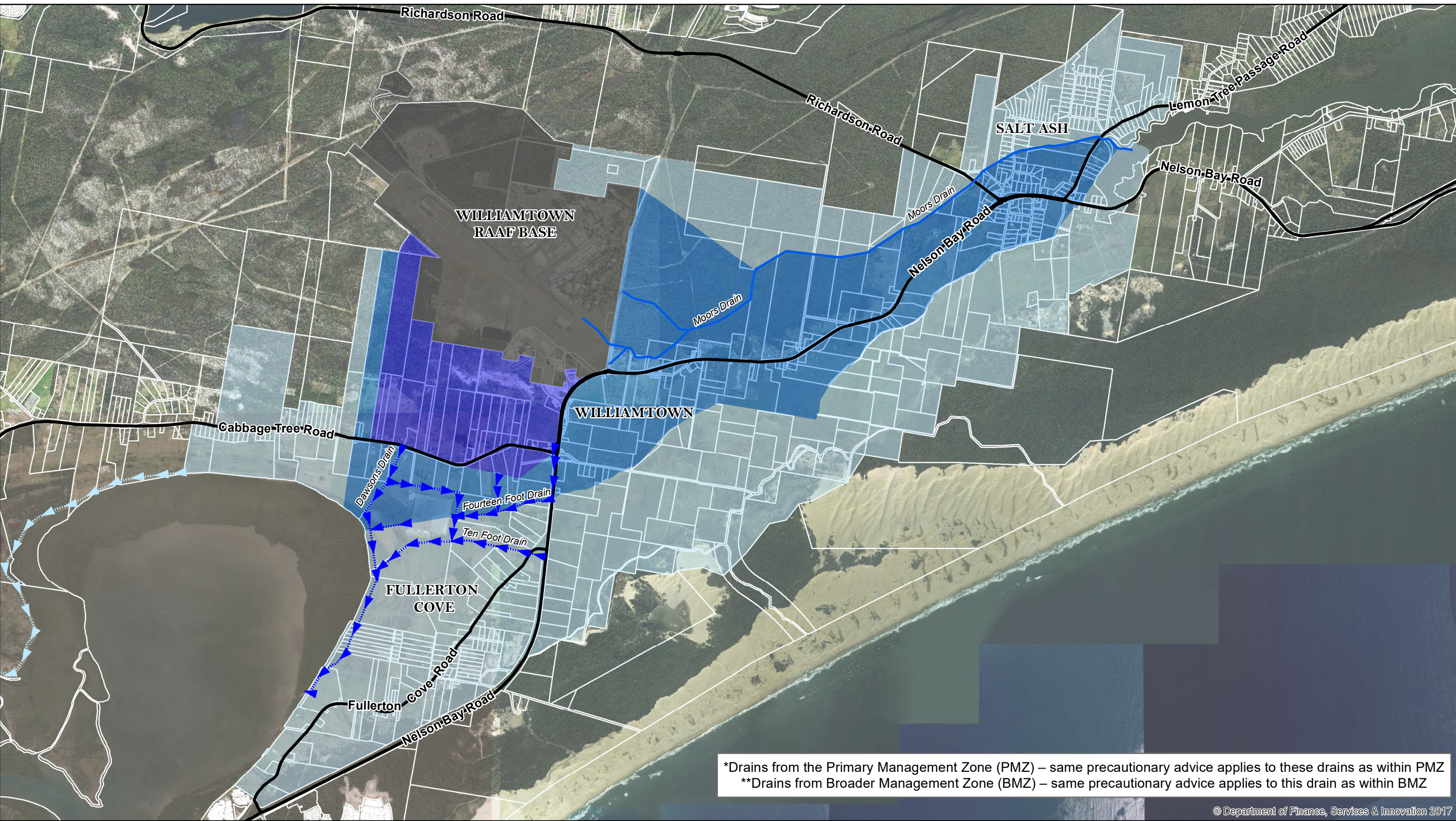
As the investigation phase is now complete, the NSW Government expects the Department of Defence will shift their focus to long term monitoring and consolidate remediation and management efforts for the contaminated land.

The NSW Government will continue to support the Williamstown Community and promoting the tailored advice. In the longer term, the NSW EPA will review the groundwater sampling periodically and update advice accordingly.

Where can I find more information?

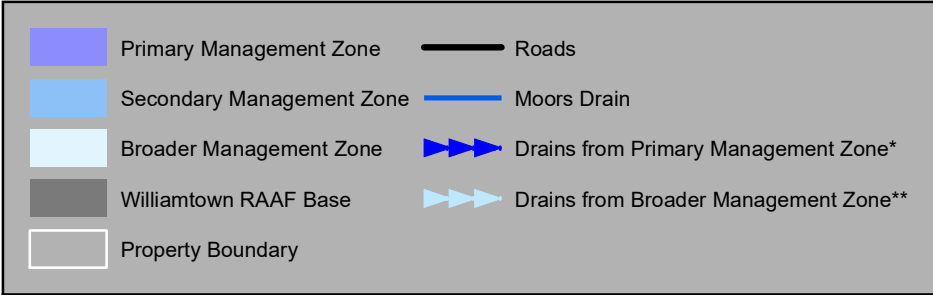
The tailored advice and latest information will be available on the EPA's website at www.epa.nsw.gov.au/MediaInformation/williamtown.htm

You can also book a one-on-one discussion with an EPA Officer by filling out the form at this page, or calling the Environment Line on **131 555**.



*Drains from the Primary Management Zone (PMZ) – same precautionary advice applies to these drains as within PMZ
**Drains from Broader Management Zone (BMZ) – same precautionary advice applies to this drain as within BMZ

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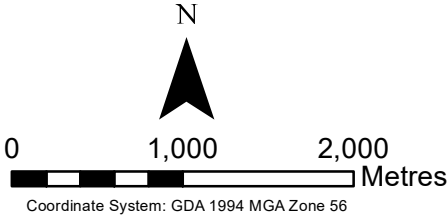


Williamtown Management Area

Map Created: 19/12/2017

Copyright NSW Environment Protection Authority.
This map is not guaranteed to be free from error or omission.
EPA and its employees disclaim liability for any act done on the
information in the map and any consequences of such acts or omissions.

Base imagery: Nearmap 17 November 2017



Williamtown Management Area Map

The Williamtown Management Area comprises three zones:

- **Primary Management Zone** – this area has significantly higher levels of PFAS and therefore the strongest advice applies.
- **Secondary Management Zone** – this area has some elevated levels of PFAS.
- **Broader Management Zone** – the topography and hydrology of the area means PFAS detections could occur now and into the future.

Each zone has tailored precautionary advice for residents to minimise exposure to PFAS originating from the RAAF Base Williamtown.

The map is based on many sources of information, including:

- The Defence Human Health Risk Assessment monitoring data (released 5 December 2017)
- The location of drainage lines, creeks and other surface water features
- The height of land above sea level
- The location of property boundaries and roads
- Surface water and groundwater flow information based on actual measured data, and modelled data for where contamination may flow in the future.

The map also shows drains leading from the Primary Management Zone (marked as dark blue arrows) and Moors Drain in the Secondary Management Zone (marked with a blue line). The precautionary advice for the area in which the drain is located applies.

Following feedback from the community, the EPA has been working with a group of water experts and the Williamtown Community Reference Group to improve the maps for the various management zones:

- Property boundaries have been overlaid to easily identify individual properties.
- Names of main roads have been included for easy reference
- The three zones within the Management Area are now identified by three shades of blue, representing the concentrations of PFAS detected. This also improves ease of access for visually-impaired people.
- There are now three close-up versions of Fullerton Cove, Williamtown and Salt Ash

Williamtown PFAS investigations: air monitoring

Information for local residents

The risk of exposure to per- and poly- fluoroalkyl substances (PFAS) via dust is low. Studies conducted by the NSW Government, in consultation with independent air monitoring experts, have found that the potential health risks posed by exposure to PFAS through air, are not significant. These studies concluded that air monitoring will not add to information about exposure risk from these pathways, and that managing risk through food and water should be the focus of efforts to reduce exposure. Risk calculations using the recently revised Food Standards Australia New Zealand (FSANZ) guidelines for the tolerable daily intake for PFAS support this assessment.

Is PFAS via dust a significant exposure pathway?

While the firefighting foams used at the Williamtown RAAF base did not contain the types of PFAS that are volatile (form a gas in the air), PFAS can attach to dust particles.

Exposure can occur through:

- Inhaling fine dust particles.
- Ingesting dust from hands, furniture, countertops, floors.

However, the health risk from exposure to PFAS via dust is low.

How has the safety of PFAS via dust been determined?

The Human Health Risk Assessment (HHRA) looked at many different exposure scenarios and calculated the health risk to both adults and children.

Additionally, the NSW EPA met with air quality and toxicology experts.

The risk profile for PFAS in dust has subsequently been reviewed following the release of the FSANZ endorsed levels for the tolerable daily intake for PFOS, PFOA and PFHxS, which are lower than those used in the HHRA.

Throughout these assessments, the use of contaminated water (surface water and groundwater) and consumption of home

grown food such as beef and eggs were identified as high risk exposure pathways.

Exposure pathways such as inhalation of dust in air and incidental ingestion of soil and dust were also assessed and were identified as low risk exposure pathways.

What factors were used in the risk calculations?

Separate calculations were used to review the risks associated with inhalation and ingestion. These calculations were repeated using the FSANZ endorsed values.

Real data from the Newcastle air quality monitoring network was used to determine the amount of dust in the air, however in order to allow a margin of safety, the following 'worst-case scenario' factors were accommodated:

- Levels of dust in the air were assumed to be high, rather than the levels that typically occur.
- All household dust was assumed to be from contaminated soil.
- Levels of PFAS in soil were assumed to be high across the whole area, rather than the lower levels that typically occur.

What were the findings?

The calculations for both inhalation and ingestion showed that exposure to PFAS via dust is low.

Ingestion

The calculations, using the FSANZ endorsed values, found that exposure to PFAS in dust by ingestion accounts for:

- 0.3% of the Tolerable Daily Intake (TDI) in the Williamstown Investigation Area (minus the Southern area).
- 3% of the TDI in the Southern part of the Williamstown Investigation Area.

These calculations show exposure via ingestion of PFAS in dust accounts for a very small percentage of the TDI, indicating very low risk.

A separate calculation was undertaken using the highest PFAS soil concentrations detected at the RAAF base.

This found that exposure by ingestion of soil for adults living long-term on the Base could account for up to 18% of the TDI. To assess the risk to workers involved in construction work on the base, separate site-specific calculations would be required and this is a matter for the Department of Defence.

Inhalation

Calculations for inhalation as an exposure pathway resulted in even lower risk than ingestion.

The calculations found that exposure by inhalation accounts for:

- 0.001% of the TDI in the Williamstown Investigation Area.
- 0.01% of the TDI in the southern part of the Williamstown Investigation Area.

What conclusions can be drawn from these results?

The calculations confirmed that:

- The risk of exposure to PFAS via dust is low.
- The risk from other pathways such as food and water is more important and

should remain the focus of efforts to reduce potential exposure.

- Air monitoring will not add to what we know about the risk of exposure to PFAS via dust.

Additionally, the ability to undertake air monitoring is limited with no commercial laboratories in Australia or overseas with NATA accredited methods (or equivalent) for quantifying PFAS in air.

What is a TDI?

A TDI or tolerable daily intake is the amount of a substance which a person, based on the best available evidence, can be exposed to per day over a lifetime, without appreciable health risk.

Exceeding the TDI does not necessarily mean health effects will occur, because in calculating the TDI value, a number of large safety factors have already been put in to add extra protection to people.

Given that PFAS take a long time to break down in humans and the environment, it is important to reduce exposure wherever practicable, even if the TDI is not exceeded.

The NSW Government's precautionary guidelines aim to minimise the community's exposure to these substances.

Where can I find more information?

More information on PFAS is available at www.epa.nsw.gov.au/MediaInformation/williamtown.htm.

If you have any questions or concerns, call the NSW Environment Line on **131 555**.

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Preliminary Surface Water Investigation Results – Williamtown NSW

Executive Summary

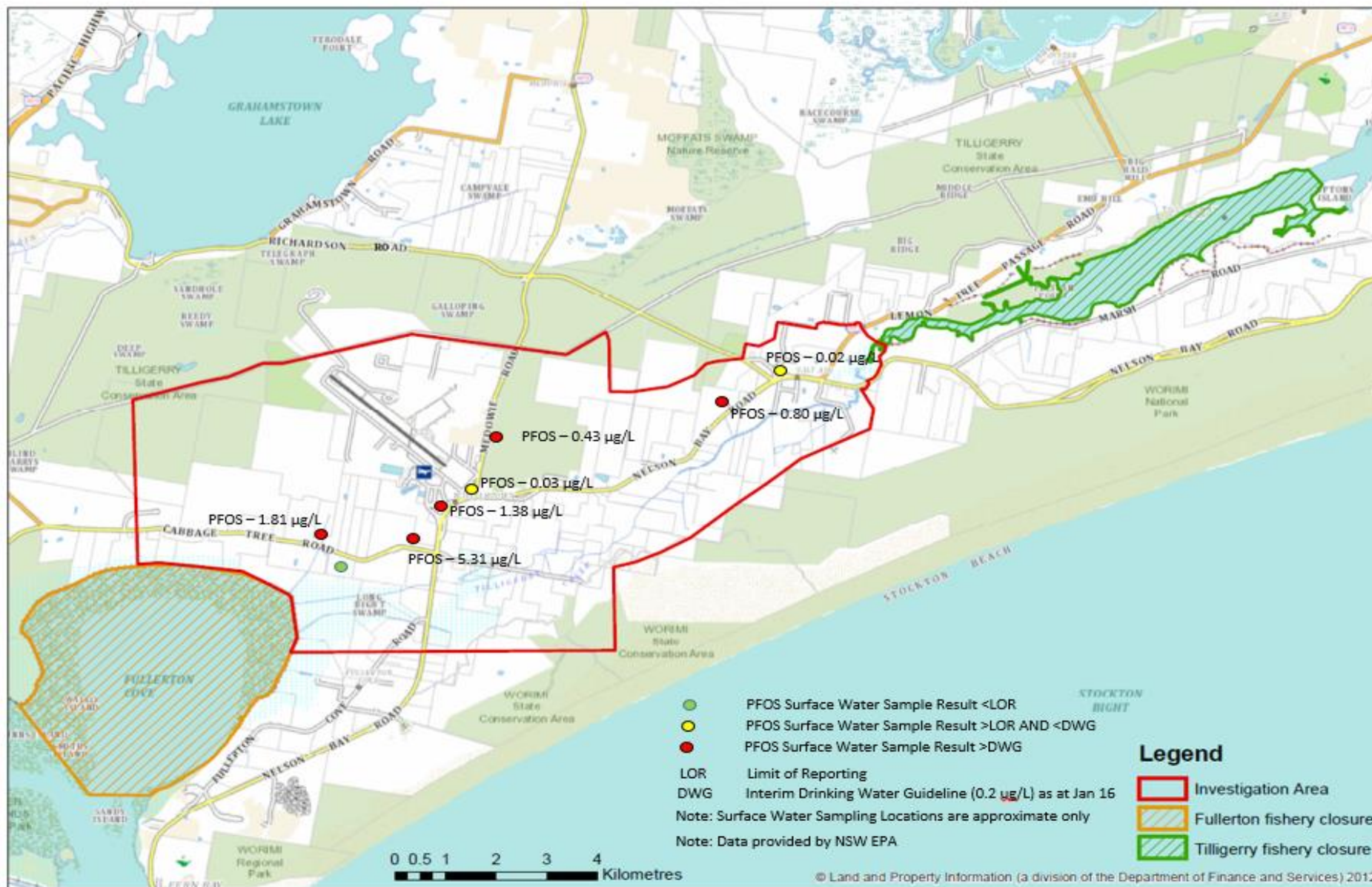
The Williamtown Investigation Area was based on an understanding of the flow of surface water and groundwater, not contamination concentrations. Due to the summer 2015-2016 flooding, the NSW Government collected water samples from drainage canals, ditches, and standing water in the Williamtown area following the flood peak in early January 2016 in order to determine if changes were identified. Water samples were measured for range of perfluorinated compounds (PFAS) associated with firefighting foam historically used at RAAF Williamtown.

PFAS were detected in most samples, including standing water on public property and ditches. Post-flood PFAS concentrations were consistent with pre-flood measurements in the same area.

The results were also consistent with the health advisory, which includes not to drink or prepare food from water bores, drains, creeks or dams inside the Investigation Area.

A summary of the EPA Surface Water Sampling Data is provided in the accompanying map.

Surface Water – PFOS Analytical Results– Jan 2016 (Post Flood)

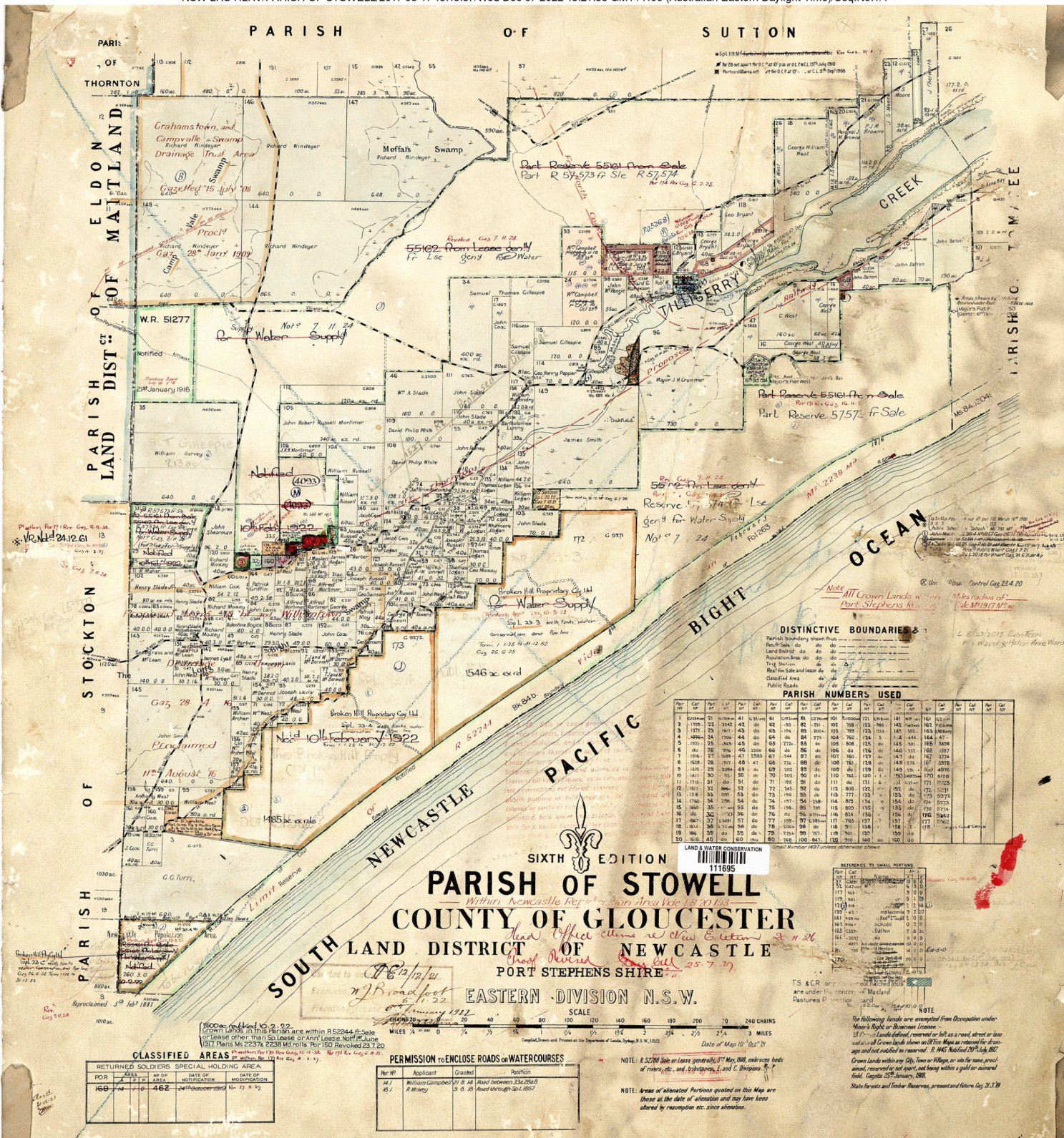


JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288



Appendix F

Historical Maps



JM Environments
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ABN 67 166 341 288



Appendix G

Historical Titles



SEARCH DATE

10/12/2024 7:55PM

FOLIO: 1/1006307

First Title(s): VOL 11291 FOL 85
Prior Title(s): 1911/557701

Recorded	Number	Type of Instrument	C.T. Issue
15/9/1999	DP1006307	DEPOSITED PLAN	LOT RECORDED FOLIO NOT CREATED
5/9/2007	AD396966	DEPARTMENTAL DEALING	FOLIO CREATED CT NOT ISSUED
17/4/2012	AG928872	DISCHARGE OF MORTGAGE	
17/4/2012	AG928875	TRANSFER	
17/4/2012	AG928878	MORTGAGE	EDITION 1
15/10/2014	DP1129901	WITHDRAWN - PROPOSED PLAN	
26/6/2015	AJ602453	DISCHARGE OF MORTGAGE	
26/6/2015	AJ602454	TRANSFER	EDITION 2
1/6/2022	DP1284254	DEPOSITED PLAN	EDITION 3
9/5/2023	AT42474	WITHDRAWN - RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	
10/5/2023	AT60994	RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	EDITION 4
8/11/2024	DP1310799	DEPOSITED PLAN	EDITION 5

*** END OF SEARCH ***

JME24089...

PRINTED ON 10/12/2024



SEARCH DATE

10/12/2024 5:55PM

FOLIO: 201/39968

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 14647 FOL 155

Recorded	Number	Type of Instrument	C.T. Issue
21/8/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
7/12/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
13/8/2007	AD337849	TRANSFER	
13/8/2007	AD337850	MORTGAGE	EDITION 1
17/4/2012	AG928872	DISCHARGE OF MORTGAGE	
17/4/2012	AG928875	TRANSFER	
17/4/2012	AG928878	MORTGAGE	EDITION 2
15/10/2014	DP1129901	WITHDRAWN - PROPOSED PLAN	
26/6/2015	AJ602453	DISCHARGE OF MORTGAGE	
26/6/2015	AJ602454	TRANSFER	EDITION 3
1/6/2022	DP1284254	DEPOSITED PLAN	EDITION 4
9/5/2023	AT42474	WITHDRAWN - RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	
10/5/2023	AT60994	RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	
10/5/2023	AT61008	RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	EDITION 5
8/11/2024	DP1310799	DEPOSITED PLAN	EDITION 6

*** END OF SEARCH ***

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PRINTED ON 10/12/2024



SEARCH DATE

10/12/2024 8:13PM

FOLIO: 991/627179

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 14932 FOL 246

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
20/9/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
29/1/2003	9329420	TRANSFER	
29/1/2003	9329421	MORTGAGE	EDITION 1
26/5/2005	AB506107	DISCHARGE OF MORTGAGE	
26/5/2005	AB506108	TRANSFER	
26/5/2005	AB506109	MORTGAGE	EDITION 2
6/1/2009	AE433131	CAVEAT	
17/4/2012	AG928871	DISCHARGE OF MORTGAGE	
17/4/2012	AG928874	TRANSFER	
17/4/2012	AG928878	MORTGAGE	EDITION 3
15/10/2014	DP1129901	WITHDRAWN - PROPOSED PLAN	
26/6/2015	AJ602452	WITHDRAWAL OF CAVEAT	
26/6/2015	AJ602453	DISCHARGE OF MORTGAGE	
26/6/2015	AJ602454	TRANSFER	EDITION 4
1/6/2022	DP1284254	DEPOSITED PLAN	EDITION 5
9/5/2023	AT42474	WITHDRAWN - RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	
10/5/2023	AT60955	RELEASE OR EXTINGUISHMENT OF RESTRICTION ON THE USE OF LAND	EDITION 6
8/11/2024	DP1310799	DEPOSITED PLAN	EDITION 7

*** END OF SEARCH ***

JME24089...

PRINTED ON 10/12/2024



LAND
REGISTRY
SERVICES

NEW SOUTH WALES LAND REGISTRY SERVICES - HISTORICAL SEARCH

Historical Search

Information Provided Through
triSearch (Website)
Ph. 1300 064 452

SEARCH DATE

10/12/2024 7:59PM

FOLIO: 1911/557701

First Title(s): SEE PRIOR TITLE(S)
Prior Title(s): VOL 11975 FOL 130

Recorded -----	Number -----	Type of Instrument -----	C.T. Issue -----
28/3/1988		TITLE AUTOMATION PROJECT	LOT RECORDED FOLIO NOT CREATED
27/7/1988		CONVERTED TO COMPUTER FOLIO	FOLIO CREATED CT NOT ISSUED
25/5/1994		AMENDMENT: LOCAL GOVT AREA	
15/9/1999	DP1006307	DEPOSITED PLAN	
2/4/2007	AD23587	DEPARTMENTAL DEALING	
13/8/2007	AD337849	TRANSFER	
13/8/2007	AD337850	MORTGAGE	EDITION 1
5/9/2007	AD396939	DEPARTMENTAL DEALING	FOLIO CANCELLED

*** END OF SEARCH ***

JME24089...

PRINTED ON 10/12/2024



LAND
REGISTRY
SERVICES

NEW SOUTH WALES LAND REGISTRY SERVICES - CT INQUIRY

CT Enquiry

Information Provided Through
triSearch (Website)
Ph. 1300 064 452

Following the abolishment of paper certificates of title in NSW on 11 October 2021, Real Property title reference information retrieved through the 'Certificate of Title Inquiry' and 'Certificate Authentication Code' searches should not be relied upon without conducting further checks. Information provided about Water Access Licences in these searches is unaffected and remains current.

FOLIO: 201/39968

Status: NEW EDITION ISSUED - CT NOT PRINTED

Edition No: 6 Date Issued: 8/11/2024 Status Date: 8/11/2024

Last Delivered To: 11T NEW EDITION ISSUED - CT NOT PRINTED

Date Delivered: 8/11/2024 Issued By: DP1310799

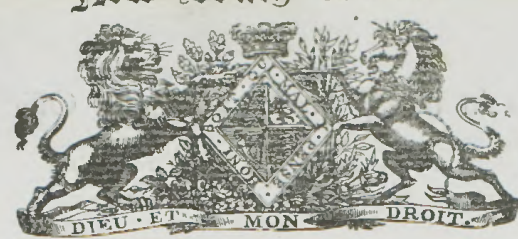
*** END OF SEARCH ***

jme24089...

PRINTED ON 10/12/2024

NEW SOUTH WALES.
Stamp Duty,
SYDNEY, N. S. W.
13:5:59

Collect
in. *Bruch*



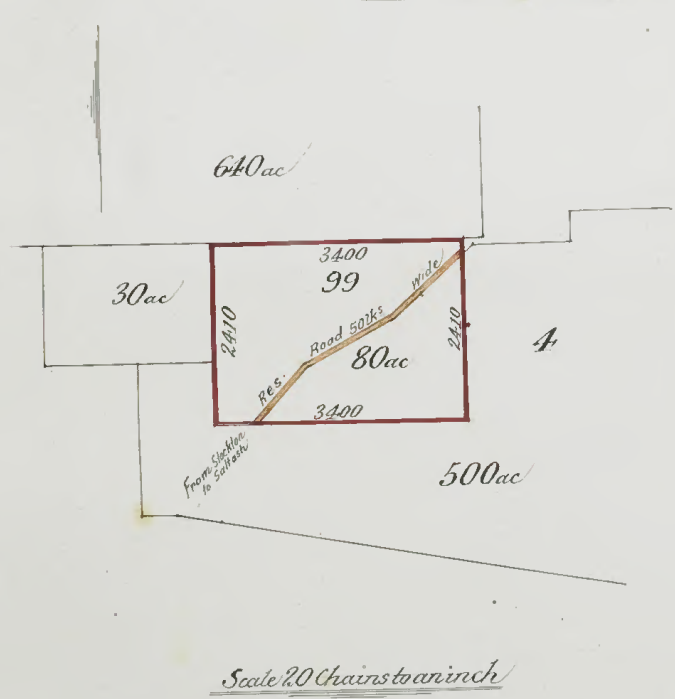
REGISTER BOOK,
VOL. 925 FOL. 138

CANCELLED

GRANT OF LAND PURCHASED BY CONDITIONAL SALE WITHOUT COMPETITION. (DECLARED TO BE VALID BY 52 VICTORIA No. 13.)

VICTORIA, by the Grace of God, of the United Kingdom of Great Britain and Ireland, Queen, Defender of the Faith, and so forth:—
TO ALL to whom these Presents shall come, Greeting:—

WHEREAS *William West* of *Stockton* in Our said Colony, claims to be entitled, in respect of a purchase by Conditional Sale, without competition, under the 13th Section of the Crown Lands Alienation Act of 1861, to the parcel of land hereinafter described: AND WHEREAS the said purchase of the said land is said to have been found to be wholly or in part illegal, for the reasons set against the particulars thereof in Schedule A of the Crown Lands Purchases Validation Act of 1888: AND WHEREAS by the said last mentioned Act the said purchase of the said land is declared to be valid and effectual in law, subject, nevertheless, to the fulfilment by the holder thereof of the several conditions and provisions applicable thereto, prescribed by "The Crown Lands Alienation Act, 1861," "The Lands Acts Amendment Act, 1875," and "The Lands Acts Further Amendment Act, 1880," and to the conditions of forfeiture or reversion prescribed by the said Acts: AND WHEREAS the declaration required by the 18th Section of the said Crown Lands Alienation Act of 1861 has been made, and the Minister for the time being charged with the administration of the public lands is satisfied that all things required by law to be done to entitle the said *William West* to a grant of the fee simple of the said land, subject to the reservations hereinafter contained, have been done and performed: AND WHEREAS the sum of *eighty pounds* sterling, being the purchase money payable for the said land, has been duly paid into the Office of the Colonial Treasurer of Our said Colony: NOW KNOW YE, That for and in consideration of the said sum, for and on Our behalf well and truly paid into the Colonial Treasury of Our said Colony, before these presents are issued, and of all and singular the premises, We, for Us, Our Heirs and Successors, Do HEREBY GRANT unto the said *William West* his Heirs and Assigns, subject to the several and respective reservations hereinafter mentioned, ALL THAT allotment or parcel of land in Our said Colony, containing by admeasurement *Eighty acres* be the same more or less, situated in the County of *Gloucester* and Parish of *Stowell* *Portion Ninety-nine*



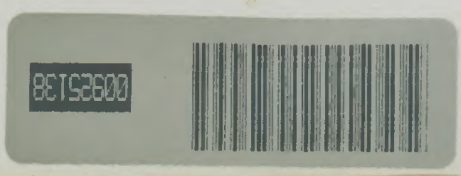
COMMENCING at the North Eastern corner of *William West's* most Easterly thirty acres and bounded thence on the West by the Eastern boundary of that land and a line dividing it from *Portion four* of five hundred acres in all bearing South twenty four chains ten links on the South by a Northern boundary of *Portion four* aforesaid bearing East thirty four chains on the East by a Western boundary of that *Portion* and a line crossing the road from *Stockton* to *Saltash* in all bearing North twenty four chains ten links and on the North by part of the Southern boundary of *John Smith's* six hundred and forty acres bearing West thirty four chains to the point of commencement. Excluding of the road fifty links wide from *Stockton* to *Saltash* passing through this land in a North Easterly direction the area of which has been deducted from the total area.

As per plan in the margin hereof: with all the Rights and Appurtenances whatsoever thereto belonging: To Hold unto the said *William West* his Heirs and Assigns for ever: Subject nevertheless, to the reservations, provisoes, and conditions hereinafter contained, that is to say: ~~Provided~~ Nevertheless, AND WE DO HEREBY RESERVE unto Us, Our Heirs and Successors, all Minerals which the said Land contains, with full power and authority for Us, Our Heirs and Successors, and such person or persons as shall from time to time be authorized by Us, Our Heirs and Successors, or by the Governor for the time-being of Our said Colony, to enter upon the said Lands, and to search for, mine, dig, and remove the said Minerals, with full right of ingress, egress, and regress, for the purposes aforesaid: ~~Provided~~ Also, AND WE DO HEREBY FURTHER EXCEPT AND RESERVE unto Us, Our Heirs and Successors, all such parts and so much of the said Land as may hereafter be required for a Public Way, or Public Ways, Canals, or Railroads, in, over, and through the same, to be set out by Our Governor for the time-being of Our said Colony or some person by him authorized in that respect; AND ALSO all Sand, Clay, Stone, Gravel, and Indigenous Timber, and all other Materials, the natural produce of the said Land, which may be required at any time or times hereafter by the Government of Our said Colony, for the construction and repair of any Public Ways, Bridges, or Canals, or for Naval purposes, or Railroads, or any Fences, Embankments, Dams, Sewers, or Drains necessary for the same, together with the right of taking and removing all such Materials: AND ALSO the right of full and free ingress, egress, and regress, into, out of, and upon the said Land, for the several purposes aforesaid, or any of them: In Testimony Whereof, We have caused this Our Grant to be Sealed with the Seal of Our said Colony.

WITNESS Our Right Trusty and Well-beloved Councillor THE RIGHT HONOURABLE CHARLES ROBERT, BARON CARRINGTON, Knight Grand Cross of Our Most Distinguished Order of Saint Michael and Saint George, Governor and Commander-in-Chief of Our Colony of NEW SOUTH WALES and its Dependencies, at Government House, Sydney, in NEW SOUTH WALES aforesaid, this *Eighteenth* day of *April* in the fifty-second year of Our Reign, and in the year of Our Lord one thousand eight hundred and eighty-nine.

James Bruch

William West



RECORDED and ENROLLED in the Registrar General's Office, at Sydney, in New South
Wales, this 13th day of May 1889.

[Signature]
Registrar General.

No. 28232 APPLICATION BY TRANSMISSION
Sarah Ann West of Fullerton Cove
Widow
to 20 20 20 the registered
Proprietors of the land within described in pursuance of the above
Application. Produced 1st October 1928 and
entered 5th October 1928
at 12 o'clock in the noon.
[Signature]
REGISTRAR GENERAL

No. B 418555 CAVEAT dated 13th September 1928
by the Registrar General. Produced and entered
5th October 1928
at 12 o'clock in the noon.
[Signature]
REGISTRAR GENERAL

The within Caveat No. 418555
is hereby withdrawn.
Dated 10th December 1928
[Signature]
REGISTRAR GENERAL

No. B 447594 TRANSFER dated 19th October 1928
from the said Sarah Ann West to Leslie Anderson
of Ball's Ash Farm
of the land within described
Produced 19th November 1928 and entered 10th December 1928
at 12 o'clock in the noon.
[Signature]
REGISTRAR GENERAL

No. L524708 TRANSFER dated 6th June 1969
to A. F. Toll Transport Limited
of the land within described.
Entered 13th August 1969
As to land in this transfer
this deed is cancelled
and new certificate issued
Vol. 11148 Fol. 121
[Signature]
REGISTRAR GENERAL

281-1
L524708

281-1
L524708
114389
18707574
L524708 T124711



PROPERTY ACT, 1900

Vol. **11975** Fol. **129**

I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

SEE AUTO FOLIO
Jonathan



159

89° 45'

1000-3

35'

899-9

180°

99

11a. 2r. 13 1/4 p.

1910

270° 49'

25° 3'

259° 12' 422-5

45° 240° 58' 45'

270-9

100

WIDE

599-6

90° 49'

250-3

60° 58' 45'

397-2

79° 12' 45"

100 WIDE

VAR. WIDTH

27° 50' 55"

633-5

34° 590-0

18'

45"

14a. 1r. 39 1/2 p.

1911

1398-4

269° 36'

277° 100

24' WIDE

176-9

49'

180°

160

09557701

Estate in Fee Simple in Lot 1910 in Deposited Plan 557701 at Fullerton Cove in the Shire of Port Stephens Parish of Stowell and County of Gloucester. EXCEPTING THEREOUT the minerals reserved by the Crown Grant.

ARTHUR BAYLEY SMITH of Hamilton, Technical Officer and HELEN SMITH, his wife as Joint Tenants.

1. Reservations and conditions, if any, contained in the Crown Grant above referred to.
2. Attention is directed to Section 8 Land Aggregation Tax Management Act 1971. See M512123.

J. Watson
Registrar General

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED.

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE LAND TITLES OFFICE

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

Page 1) Vol. 11975 Fol. 129

GRM
BA

FIRST SCHEDULE (continued)							
REGISTERED PROPRIETOR		INSTRUMENT			ENTERED	Signature of Registrar General	
NATURE	INSTRUMENT NUMBER	DATE					
SEE AUTO FILIO CANCELLED							

SECOND SCHEDULE (continued)						
INSTRUMENT		PARTICULARS		ENTERED	Signature of Registrar General	CANCELLATION
NATURE	INSTRUMENT NUMBER	DATE				

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

STATE OF
NEW SOUTH WALES

BROWN GRANT



13374217

No. 19-45540



Vol. 13374 Fol. 217
Registered 5-8-1977

Registrar General

We, Elizabeth the Second, by the Grace of God Queen of Australia and Her other Realms and Territories, Head of the Commonwealth, do hereby grant to the person described in the First Schedule an Estate in Fee Simple in the land within described, subject nevertheless to such reservations, conditions and other provisions as are shown in the Second Schedule. In testimony whereof We have caused this Our Grant to be sealed with the seal of Our said State

Witness Our Governor of Our State of New South Wales and its Dependencies in the Commonwealth of Australia, at Sydney in Our said State, this **twenty ninth** day of **July** in the **twenty sixth** year of Our Reign and in the year of Our Lord one thousand nine hundred and **seventy seven**.

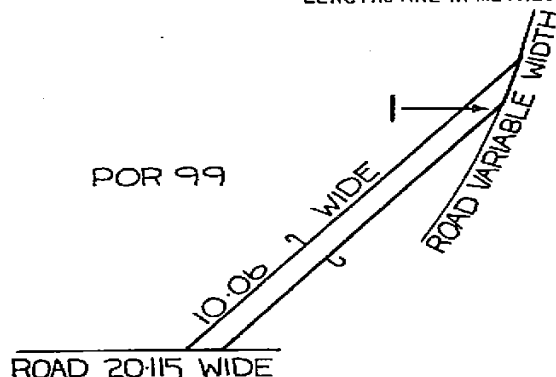
A. A. Beutler

Governor



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



AREA : 1710 m²
REDUCTION RATIO 1 : 2500

LAND REFERRED TO

Lot 1 in Deposited Plan 254154 in the Shire of Port Stephens Parish of Stowell and County of Gloucester. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface.

FIRST SCHEDULE

A.F. TOLL TRANSPORT LIMITED.

SECOND SCHEDULE

- We do hereby reserve and except unto Us Our Heirs and Successors all minerals which the land hereby granted contains with full power and authority for Us Our Heirs and Successors and such person or persons as shall from time to time be authorised by Us or Them to enter upon the land hereby granted and to search for mine dig and remove the said minerals and also all such parts and so much of the land hereby granted as may hereafter be required for public ways in over and through the same to be set out by Our Governor for the time being of Our said State or some person by him authorised in that respect with full power for Us Our Heirs and Successors and for Our Governor as aforesaid by such person or persons as shall be by Us Them or him authorised in that behalf to make and conduct all such public ways And the right of full and free ingress egress and regress into out of and upon the land hereby granted for the several purposes aforesaid or any of them Provided Further and it is expressly declared that mining operations may have been and may be carried on upon and in the land below the land hereby granted and the lands adjoining the land hereby granted and the land below the same and metals and minerals may have been and may be removed therefrom and that these presents are made upon and subject to the condition that neither the Grantee or Grantees nor his her their or its sequels in title shall be entitled to make or prosecute any claim for damages or take any proceedings either by way of injunction or otherwise against Us Our Heirs and Successors or the Government of Our said State or any lessee or lessees under any Mining Act or Acts of Our said State or his or their executors administrators or assigns for or in respect of any damage or loss occasioned by the letting down subsidence or lateral movement of the land hereby granted or otherwise howsoever by reason of the following acts and matters that is to say by reason of Us Our Heirs or Successors or the Government of Our said State or any person on Our Their or its behalf or any lessee or lessees as aforesaid or his or their executors administrators or assigns having worked or now or hereafter working any mines or having carried on or now or hereafter carrying on mining operations or having searched for worked won or removed or now or hereafter searching for working winning or removing any metals or minerals under in or from the land below the land hereby granted or on in under or from any other lands situated laterally to the land hereby granted and the land below the same and whether on or below the surface of such other lands Provided Lastly and we do hereby expressly reserve unto Us Our Heirs and Successors the liberty and authority by reason of the acts and matters aforesaid or in the course thereof for Us Our Heirs and Successors and the Government of Our said State and any person on Our Their or its behalf and any lessee or lessees as aforesaid and his or their executors administrators and assigns to from time to time let down without payment of any compensation whatsoever any part of the land hereby granted and/or of the surface thereof.

2. Restrictions on dealings - see section

CANCELLED

WARNING: THIS DOCUMENT MUST NOT BE REMOVED FROM THE REGISTRAR GENERAL'S OFFICE

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

(Page 1) Vol. 13374 Fol. 217

FIRST SCHEDULE (continued)

FIRST SCHEDULE (continued)					
REGISTERED PROPRIETOR		INSTRUMENT		REGISTERED	Signature of Registrar General
		NATURE	NUMBER		
This deed is cancelled as to <u>both</u>					
Plan Certificates of Title have issued on <u>14-11-1968</u>					
for lots in <u>Registered</u> Plan No <u>647179</u> as follows:-					
<u>9914992</u> and <u>14931</u> for <u>1946</u> and <u>1947</u> respectively.					
					
REGISTRAR GENERAL					
					

SECOND SCHEDULE (continued)

[illegible]

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

DP627179

NEW SOUTH WALES



CERTIFICATE OF TITLE

REAL PROPERTY ACT, 1900



14647155

Vol. **14647** Fol. **155**

EDITION ISSUED

5 2 1982



No.200126

I certify that the person named in the First Schedule is the registered proprietor of an estate in fee simple (or such other estate or interest as is set out below) in the land described subject to the recordings appearing in the Second Schedule and to the provisions of the Real Property Act, 1900.

CANCELLED

[Signature]

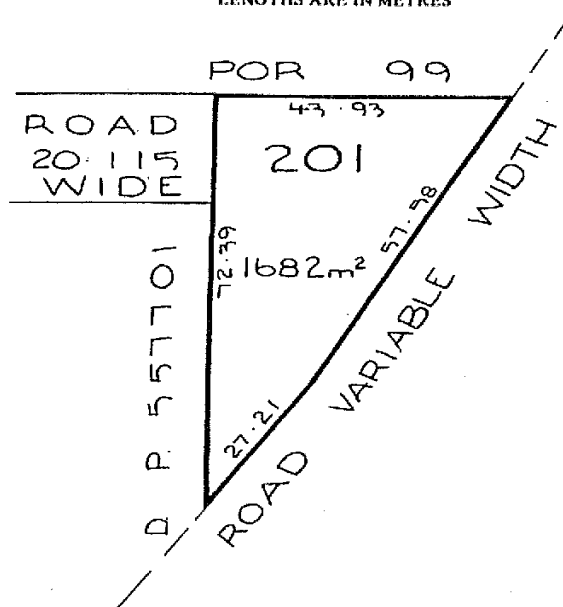
Registrar General.

SEE AUTO FOLIO



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



LAND REFERRED TO

Lot 201 in Deposited Plan 39968 in the Shire of Port Stephens Parish of Stowell and County of Gloucester.

FIRST SCHEDULE

ARTHUR BAYLEY SMITH and HELEN SMITH as Joint Tenants.

SECOND SCHEDULE

1. Land excludes minerals and is subject to reservations and conditions in favour of the Crown - See Memorandum S700000A.

--	--	--

NOTATIONS AND UNREGISTERED DEALINGS

--	--	--

SECOND SCHEDULE (continued)
PARTICULARS
Registrar General
CANCELLATION

--	--	--

FIRST SCHEDULE (continued)
REGISTERED PROPRIETOR
Registrar General

NEW SOUTH WALES

TIFICATE OF TITLE

REAL PROPERTY ACT, 1900



14932246

F.138
First Title: Vol. 925 Fol.138
Vol.13374 Fol.217
Prior Titles: Vol.11148 Fol.112
Vol.13374 Fol.217

Vol. **14932** Fol. **246**

EDITION ISSUED

12 11 1982.

CANCELLED

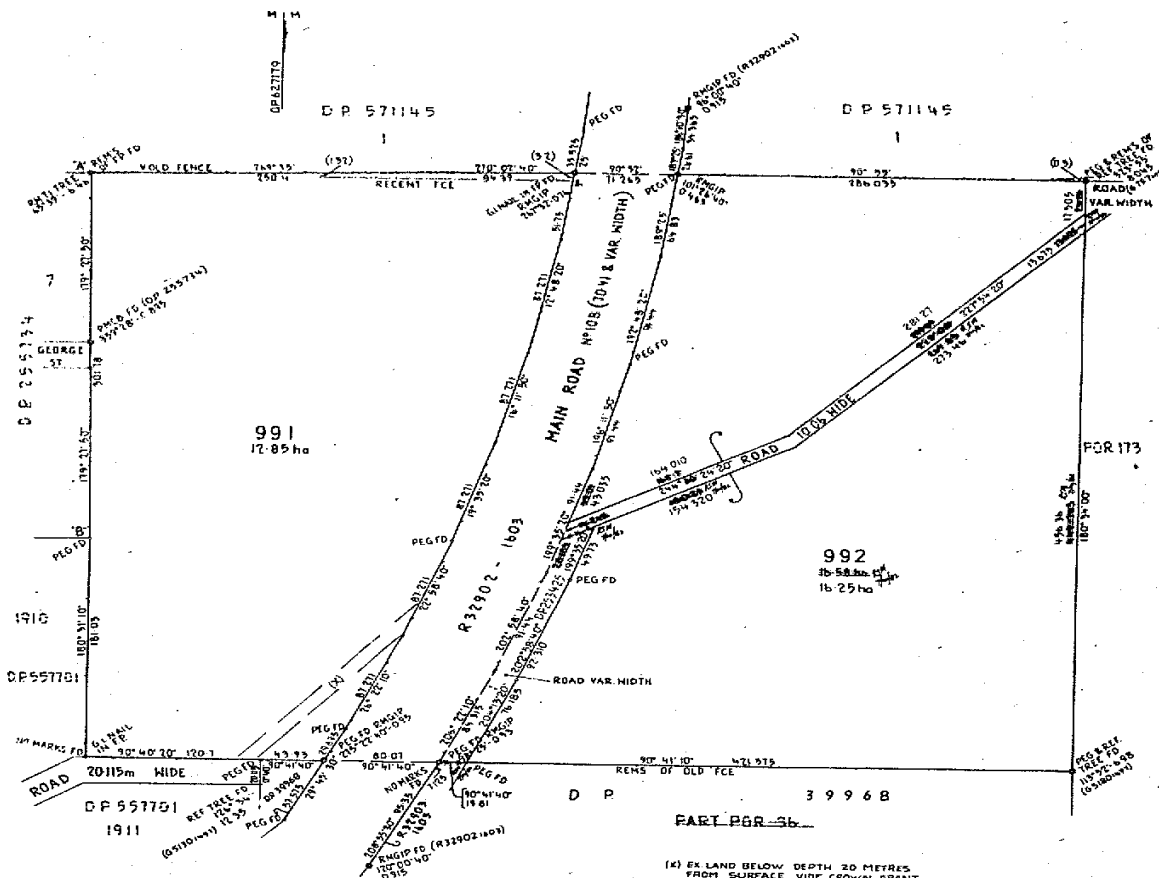
I certify that the person described in the First Schedule is the registered proprietor of the undermentioned estate in the land within described subject nevertheless to such exceptions encumbrances and interests as are shown in the Second Schedule.

he
SEE AUTO FOLIO
Registrar General.



PLAN SHOWING LOCATION OF LAND

LENGTHS ARE IN METRES



ESTATE AND LAND REFERRED TO

Estate in Fee Simple in Lot 991 in Deposited Plan 627179 at Fullerton Cove in the Shire of Port Stephens Parish of Stowell and County of Gloucester. EXCEPTING THEREOUT the land below a depth of 20 metres from the surface as regards the land shown so affected in the plan hereon and the minerals reserved by the Crown Grants.

FIRST SCHEDULE

~~A.F. TOLL TRANSPORT LIMITED.~~

SECOND SCHEDULE

- GRM
RU 1. Reservations and conditions, if any, contained in the Crown Grants.
2. DP627179 Restriction as to user.

PERSONS ARE CAUTIONED AGAINST ALTERING OR ADDING TO THIS CERTIFICATE OR ANY NOTIFICATION HEREON

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

NOTE: ENTRIES RULED THROUGH AND AUTHENTICATED BY THE SEAL OF THE REGISTRAR GENERAL ARE CANCELLED

T355675 T. R

NOTATIONS AND UNREGISTERED DEALINGS

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SECOND SCHEDULE (continued)
PARTICULARS
Registrar General CANCELLATION

CANCELLED
SEE AUTO FOLIO

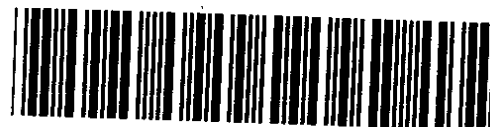
Dandrew Pty. Limited by Transfer T355675. Registered 23-12-1982.

FIRST SCHEDULE (continued)
REGISTERED PROPRIETOR
Registrar General

Form: 01T
Release: 2
www.lpi.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900



9329420Q

PRIVACY NOTE: this information is legally required and will be

STAMP DUTY

Office of State Revenue	OFFICE OF STATE REVENUE (N.S.W. TREASURY)
CLIENT No. 88940445	STAMP No. 1238
STAMP DUTY	SIGNATURE
TRANSACTION No. 12/8860	DATE
ASSESSMENT DETAILS:	

(A) TORRENS TITLE

991/627179

FORMERLY 62/4932 FOL 246

(B) LODGED BY

Delivery Box 30P	Name, Address or DX and Telephone L. J. KANE & CO. LTO BOX 30P KMcM - MARTYN	CODES T TW (Sheriff)
Reference:		

(C) TRANSFEROR

DANDREW PTY. LIMITED

ACN 001 864 884

(D) CONSIDERATION

The transferor acknowledges receipt of the consideration of \$ 340,000.00

and as regards

(E) ESTATE

the land specified above transfers to the transferee an estate in fee simple

(F) SHARE TRANSFERRED

(G) ENCUMBRANCES (if applicable):

(H) TRANSFEE

PATRICK MARTYN and PATRICIA ANNE MARTYN as to one half share as Joint Tenants AND DAVID MICHAEL MARTYN and FIONA KAY MARTYN as to one half share as Joint Tenants

(I) TENANCY: Tenants in Common

(J) DATE

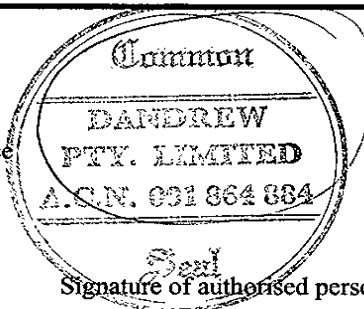
22.01.03

Certified correct for the purposes of the Real Property Act 1900 by the corporation named below the common seal of which was affixed pursuant to the authority specified and in the presence of the authorised person(s) whose signature(s) appear(s) below.
Corporation:
Authority:

Signature of authorised person: *[Signature]*

Name of authorised person: *[Signature]*

Office held: DIR/CO. SEC.



Signature of authorised person: *[Signature]*

Name of authorised person: *[Signature]*

Office held: DIRECTOR.

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name:

Signatory's capacity:

Geoffrey Fyson Slack
transferee's solicitor

Form: 01T
Release: 2
www.lpi.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900



AB506108G

PRIVACY NOTE: this information is legally required and will beco

STAMP DUTY

Office of State Revenue use only	
Client No: 1489120	327
Duty: \$2 -	Treasury No: 2580065
Aest details:	

Office of State Revenue NSW Treasury	
Client No: 88940445	1239
VENDOR DUTY ENDORSED	
Trans No: 2569246	

(A) TORRENS TITLE

991/627179

(B) LODGED BY

Delivery Box	Name, Address or DX and Telephone	CODES
48T	INITIALS: LLPN: 12381987 CITYLINK Reference: KS/Shan/Builder	T TW (Sheriff)

(C) TRANSFEROR

PATRICK MARTYN, PATRICIA ANNE MARTYN, DAVID MICHAEL MARTYN, FIONA KAY MARTYN

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of \$ 650,000.00 and as regards

(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) TRANSFEREE

BUILDEV PROPERTIES PTY.LTD. ABN 092 275 422

(I) **TENANCY:**

(J) **DATE**

11/4/05

I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Signature of witness:

Name of witness:

Address of witness:

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of transferor:

Certified for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Signatory's name:
Signatory's capacity:

Derek Vale
transferee's solicitor

All handwriting must be in block capitals.

Page 1 of 1
number additional
pages sequentially

Land and Property Information NSW.



AD337849B

Form: 01T
Release: 3.1
www.lands.nsw.gov.au

TRANSFER

New South Wales
Real Property Act 1900

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the use of this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 89478940 1261
Duty: \$2.00 Trans No: 4429925
Asst details:

(A) TORRENS TITLE

1910/557701, 1911/557701 & 201/39968

(B) LODGED BY

Document Collection Box 48T	Name, Address or DX and Telephone LLPN: 123819E CITYLINK Reference: <u>KS/LB/ 372338</u>	CODES T TW (Sheriff)
---------------------------------------	---	---

(C) TRANSFEROR

Arthur Bayley SMITH and Helen SMITH

(D) **CONSIDERATION** The transferor acknowledges receipt of the consideration of \$ 1,402,500.00 and as regards

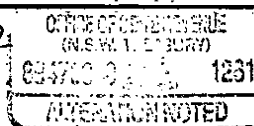
(E) **ESTATE** the land specified above transfers to the transferee an estate in fee simple

(F) **SHARE TRANSFERRED**

(G) Encumbrances (if applicable):

(H) TRANSFEREE

BUILDEV PROPERTIES PTY LTD ACN 09 2275 422



(I) **TENANCY:**

DATE 9 AUGUST 2007

(J) I certify that the person(s) signing opposite, with whom I am personally acquainted or as to whose identity I am otherwise satisfied, signed this instrument in my presence.

Certified correct for the purposes of the Real Property Act 1900 by the transferor.

Signature of witness:

Signature of transferor:

SEE ANNEXURE

Name of witness:

Address of witness:

Certified correct for the purposes of the Real Property Act 1900 by the person whose signature appears below.

Signature:

Barry Philip Marshall

Signatory's name:

Signatory's capacity:

Barry Philip Marshall
transferee's solicitor

Annexure to Transfer
Form 01T

TRANSFER dated

9 AUGUST

2007

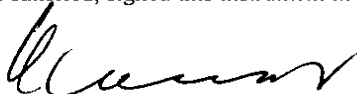
TRANSFERORS

ARTHUR BAYLEY SMITH and HELEN SMITH

TRANSFEREES

BUILDEV PROPERTIES PTY LTD

I certify that the person(s) signing opposite, with whom
I am personally acquainted or as to whose identity I am
Otherwise satisfied, signed this instrument in my presence.

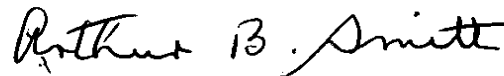


Signature of Witness

Name of Witness Thomas Laurie Adam

Address of Witness 76 Port Stephens Street
Raymond Terrace

Certified correct for the purposes of the Real
Property Act 1900 by the transferor Arthur
Bayley Smith



Signature of Transferor Arthur Bayley Smith

I certify that the person signing opposite, with whom
I am personally acquainted or as to whose identity
I am otherwise satisfied, signed this instrument in
my presence.

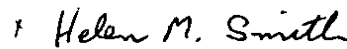


Signature of Witness

Name of Witness Thomas Laurie Adam

Address of Witness 76 Port Stephens Street
Raymond Terrace

Certified correct for the purposes of the Real
Property Act 1900 by the person names below
who signed this instrument pursuant to the
power of attorney specified.



Signature of Attorney:

Attorney's name: Helen Margaret Smith
Signing on behalf of: Helen Smith
Power of Attorney – Book: 4518
No.: 460

Form: 01T
Licence: 05-11-638
Licensee: Softdocs
Buildex Development Pty Ltd

TRANSFER
New South Wales
Real Property Act 1900



AG928875F

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the by this form for the establishment and maintenance of the Real Property Act Register. Section 96B RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

NEW SOUTH WALES DUTY

26-11-2008

0005223559-001

SECTION 54(3)

DUTY

\$ *****10.00

(A) FOLIO OF THE REGISTER

1/1006307, 201/39968 & 1910/557701

(B) LODGED BY

Document
Collection
Box

Name, Address or DX, Telephone, and LLPN if any

LLPN: 123836E
CTB

CODE

T
TW
(Sheriff)

243

Reference (optional): 32257369

(C) TRANSFEROR

BUILDEV PROPERTIES PTY LTD (ACN 092 275 422)

(D) CONSIDERATION The transferor acknowledges receipt of the consideration of \$ 1.00 and as regards the folio

(E) ESTATE of the Register specified above transfers to the transferee an estate in fee simple.

(F) SHARE TRANSFERRED

(G) Encumbrances (if applicable): AD337850

(H) TRANSFEREE

BD (NSW) PROJECT J001 PTY LTD (ACN 125 212 375)

(I) TENANCY:

DATE 21 / 11 / 2008

(J) Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Corporation: BUILDEV PROPERTIES PTY LTD (ACN 092 275 422)

Authority: Section 127 of the Corporations Act 2001

Signature of authorised person:

Name of authorised person: David Murray Sharpe

Office held: Sole Director/Secretary

Signature of authorised person:

Name of authorised person:

Office held:

Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the corporation named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.
Corporation: BD (NSW) PROJECT J001 PTY LTD (ACN 125 212 375)

Authority: Section 127 of the Corporations Act 2001

Signature of authorised person:

Name of authorised person: David Murray Sharpe

Office held: Sole Director/Secretary

Signature of authorised person:

Name of authorised person:

Office held:

60

Form: 01T
Release: 6-1

TRANSFER

New South Wales
Real Property Act 1900



AJ602454A

PRIVACY NOTE: Section 31B of the Real Property Act 1900 (RP Act) authorises the use of this form for the establishment and maintenance of the Real Property Register. Section 96B of the RP Act requires that the Register is made available to any person for search upon payment of a fee, if any.

STAMP DUTY

Office of State Revenue use only

Office of State Revenue
NSW Treasury
Client No: 2099207
Duty: \$10.00 Trans No: 8190351
Assd details:

(A) TORRENS TITLE

Folio Identifiers

1/794575, 1/1006307, 1/1142113, 3/111519, 201/39968, 991/627179, 1910/557701

(B) LODGED BY

Document
Collection
Box **124E**

Name, Address or DX, Telephone, and Customer Account Number if any

GlobalX Legal Solutions Pty Ltd
Level 3, 175 Castlereagh Street
SYDNEY 2000
Ph: 13 5669

LLPN : 123820V

Reference:

ELLI 2974171

CODES

T

TW

(C) TRANSFEROR

BD (NSW) PROJECT J001 PTY LTD (RECEIVERS AND MANAGERS APPOINTED) ACN 125212375

(D) CONSIDERATION

The transferor acknowledges receipt of the consideration of \$ 2,282,500.00 and as regards

(E) ESTATE

the abovementioned land transfers to the transferee an estate in fee simple

(F) SHARE TRANSFERRED

WHOLE

(G)

Encumbrances (if applicable):

(H) TRANSFEREE

COASTAL DEVELOPMENTS (NSW) PTY LTD ACN 604 991 826

(I)

TENANCY:

DATE

- (J)** Certified correct for the purposes of the Real Property Act 1900 and executed on behalf of the company named below by the authorised person(s) whose signature(s) appear(s) below pursuant to the authority specified.

Company:

Authority: BD (NSW) PROJECT J001 PTY LTD (RECEIVERS AND MANAGERS APPOINTED)
section 127 of the Corporations Act 2001

Signature of authorised person:

Signature of authorised person:

Name of authorised person:

Name of authorised person:

Office held:

Office held:

See annexure 'A'

Certified correct for the purposes of the Real Property Act 1900 on behalf of the transferee by the person whose signature appears below.

Signature:

Susan Elizabeth Curtis
Licensed Conveyancer

Signatory's name:

1541466

Signatory's capacity:

licensed conveyancer

- (K)** The transferee licensed Conveyancer certifies that the eNOS data relevant to this dealing has been submitted and stored under eNOS ID No. 859895 Full name: SUSAN ELIZABETH CURTIS Signature:

Annexure A to Transfer

Parties:

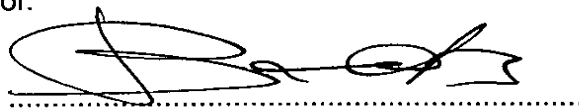
BD (NSW) Project J001 Pty Ltd (Receivers and Managers Appointed) ACN 125 212 375

and

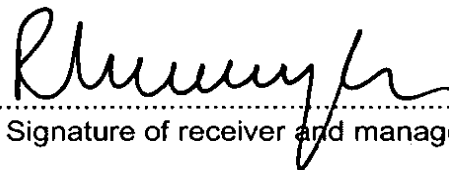
Coastal Developments (NSW) Pty Ltd ACN 604 991 826

Executed by BD (NSW) Project J001 Pty Ltd (Receivers and Managers Appointed) ACN 125 212 375

Signed for and on behalf of **BD (NSW) Project J001 Pty Ltd (Receivers and Managers Appointed) ACN 125 212 375** by its joint and several receiver and manager in the presence of:



Signature of witness



Signature of receiver and manager

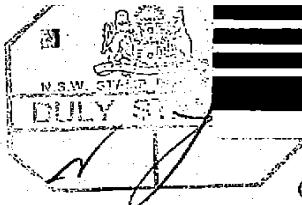
Hamish Boels

Name of witness
(please print)

RAHUL GORA

Name of receiver and manager
(please print)

LS, 2001, Square
Sydney, 2000.



-3 DEC 1982

09 15

T355675

OFFICE USE ONLY

TRANSFER

REAL PROPERTY ACT, 1900

(See Instructions for Completion on back of form)

T	31	of	1	X
\$ 30-				

Torrens Title Reference	If Part Only, Delete Whole and Give Details	Location
Volume 11148 Folio 112 Vol. 14932.246	WHOLE Part being Lot 991 in D.P. 627179 NOW WHOLE	At Fullerton Cove County of Gloucester Parish of Stowell
TRANSFEROR Note (b) <u>A.F. TOLL TRANSPORT LIMITED</u>		OFFICE USE ONLY N

(the abovenamed TRANSFEROR) hereby acknowledges receipt of the consideration of \$ 63,480.00 and transfers an estate in fee simple in the land above described to the TRANSFEREE

TRANSFEREE Note (b) <u>DANDREW PTY. LIMITED</u> as joint tenants/tenants in common	OFFICE USE ONLY S
--	----------------------

PRIOR ENCUMBRANCES Note (e) subject to the following PRIOR ENCUMBRANCES 1. _____ 2. _____ 3. _____

DATE OF TRANSFER 26/11/82.

We hereby certify this dealing to be correct for the purposes of the Real Property Act, 1900.

EXECUTION Note (f)

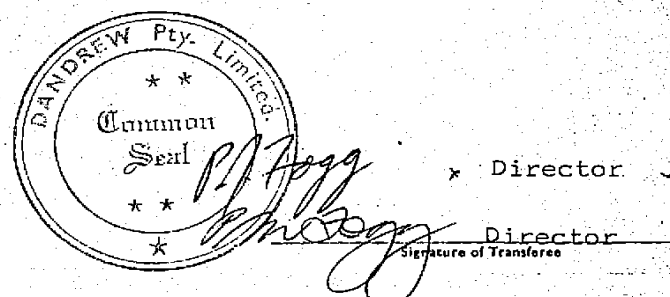
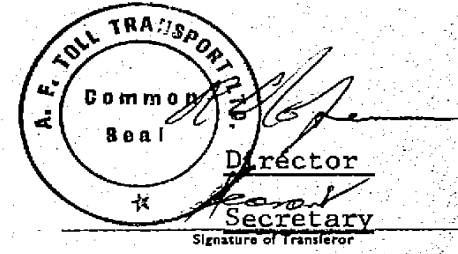
Signed in my presence by the transferor who is personally known to me

The COMMON SEAL of A.F.TOLL TRANSPORT LIMITED was hereunto affixed by authority of the Board of Directors in the presence of:

Signed in my presence by the transferee who is personally known to me

THE COMMON SEAL of DANDREW PTY. LIMITED was hereunto affixed in accordance with the Articles of Association of the Company in the presence of:

Address and occupation of Witness



TO BE COMPLETED BY LODGING PARTY		LOCATION OF DOCUMENTS	
Notes (g) and (h) LODGED BY H. M. ALLEN & CO. LAW STATIONERS 155 KING STREET, SYDNEY JX 437 SYDNEY Tel. 232-3652, 232-3554 Delivery Box Number 750		CT ☒ OTHER ☐ Herewith. In P.G.O. with _____ Produced by _____	
OFFICE USE ONLY Extra Fee Checked by REGISTERED 23-12-19 82 Registrar General			

(f) FOLIO IDENTIFIER (FOR REGD. DEALING & FOLIO IDENTIFIER)		(g) DIRECTION		(h) TYPE	(i) DEALING NUMBER	(j) DETAILS						
SECOND SCHEDULE & OTHER DIRECTIONS												
NAME AND DESCRIPTION												
DIRECTION: PROP												
No. OF NAMES:												
FIRST SCHEDULE DIRECTIONS												
OFFICE USE ONLY												

INSTRUCTIONS FOR COMPLETION

This dealing should be marked by the Commissioner of Stamp Duties before lodgment at the Registrar General's Office.

Typewriting and handwriting should be clear, legible and in permanent black non-copying ink.

Alterations are not to be made by erasure; the words rejected are to be ruled through and initialed by the parties to the dealing.

If the space provided is insufficient, additional sheets of the same size and quality of paper and having the same margins as this form should be used. Each additional sheet must be identified as an annexure and signed by the parties and the attesting witnesses.

If it is intended to create easements, covenants, &c., use forms RP13A, RP13B, RP13C as appropriate.

Rule up all blanks.

The following instructions relate to the SIDE NOTES on the form.

(a) Description of land:
(i) **TORRENS TITLE REFERENCE.**—Insert the current Folio Identifier or Volume and Folio of the Certificate of Title/Crown Grant for the land being transferred, e.g., 135/SP12345 or Vol. 8514 fol. 126. Delete if only of the land in the folio of the Certificate of Title/Crown Grant is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327A of the Local Government Act, 1919.
(ii) **PART/WHOLE.**—If part only of the land is being transferred, delete the word "WHOLE" and insert the lot and plan number, portion, &c. See also sections 327 and 327A of the Local Government Act, 1919.
(iii) **LOCATION.**—Insert the locality shown on the Certificate of Title/Crown Grant, e.g., at Chillon. If the locality is not shown, insert the Parish and County, e.g., Ph. Lismore Co. Rous.

(b) Show the full name, address and occupation or description.
(c) If the estate being transferred is a lesser estate than an estate in fee simple, delete "fee simple" and insert appropriate estate.
(d) Delete if only one transferee. If more than one transferee, delete either "joint tenants" or "tenants in common", and, if the transferees hold as tenants in common, state the shares in which they hold.
(e) In the memorandum of prior encumbrances, state only the registered number of any mortgage, lease, charge or writ to which this dealing is subject.
(f) Execution:
(i) **GENERALLY**
(ii) The certificate of correctness under the Real Property Act, 1900, must be signed by all parties to the transfer, each party to execute the dealing in the presence of an adult witness, not being a party to the dealing, to whom he is personally known.
(iii) Any person acting as transferee may sign the certificate on behalf of the transferee, the solicitor's name (not that of his firm), to be typewritten or printed adjacent to his signature. The form of execution must indicate the source of his authority, e.g., "AB by his attorney (or receiver or delegate, as the case may be) XY pursuant to power of attorney, registered Book No. and I declare that I have no notice of the revocation of the said power of attorney".
(iv) If the transfer is executed by a corporation under seal, the form of execution must indicate the statutory, judicial or other authority pursuant to which the transfer has been executed.
(v) If the transfer is executed by a corporation under seal, the form of execution should include a statement that the seal has been properly affixed, e.g., in accordance with the Articles of Association of the corporation. Each person attesting the making of the seal must state his position (e.g., director, secretary) in the corporation.
(g) Insert the name, postal address, Document Exchange reference, telephone number and delivery box number of the lodging party.
(h) The lodging party is to complete the LOCATION OF DOCUMENTS panel. Place a tick in the appropriate box to indicate the whereabouts of the Certificate of Title. List, in an abbreviated form, other documents lodged, e.g., stat. dec. for statutory declaration, ppe for probate, L/A, for letters of administration, &c.

JM Environments
0427 893 668
37 Tooke St
COOKS HILL NSW 2300
ABN 67 166 341 288



Appendix H

Laboratory Documentation

SGS

CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 1 of 2

SGS Environmental Services

Unit 16, 33 Maddox Street

Alexandria NSW 2015

Telephone No: (02) 85940400

Facsimile No: (02) 85940499

Email: au.samplerreceipt.sydney@sgs.com

Company Name: JM Environments

Address: 37 Tooke Street

COOKS HILL NSW 2300

Contact Name: James McMahon

Project Name/No: JME24089

Purchase Order No: JME24089

Results Required By: 18 December 2024

Telephone: 0427 893 668

Facsimile:

Email Results:

james@jmenvironments.com

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	DRY LAB TEST PAH / SPM	OC	Speciation Chromatography	Asbestos AF/PA										
BH1-1		1		X		1	X													
BH2-1		2		X		1	X	X												
BH3-1		3		X		1	X													
BH4-1		4		X		1	X													
BH5-1		5		X		1	X	X												
BH6-1		6		X		1	X													
BH7-1		7		X		1	X													
BH8-1		8		X		1	X													
BH9-1		9		X		1	X		X	X										
BH10-1		10		X		2	X	X		X										
BH11-1		11		X		1	X													

 SGS EHS Sydney COC
SE275698
Relinquished By: 

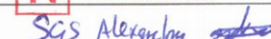
Date/Time: 11/12/24 12:55pm

Received By:  SGS Newcastle

Date/Time: 11-12-24 13:00

Relinquished By:

Date/Time:

Received By:  SGs Alexandra

Date/Time: 12/12/24 11:45

Samples Intact: Yes/No

Temperature: Ambient / Chilled 11.2°C lie

Sample Cooler Sealed: Yes/No

Laboratory Quotation No:

Comments:



CHAIN OF CUSTODY & ANALYSIS REQUEST

Page 2 of 2

SGS Environmental Services
Unit 16, 33 Maddox Street
Alexandria NSW 2015
Telephone No: (02) 85940400
Facsimile No: (02) 85940499
Email: au.samplerreceipt.sydney@sgs.com

Company Name: JM Environments
 Address: 37 Tooke Street
 COOKS HILL NSW 2300
 Contact Name: James McMahon

Project Name/No: JME24089
 Purchase Order No: JME24089
 Results Required By: 18 December 2024
 Telephone: 0427 893 668
 Facsimile:
 Email Results: james@jmenvironments.com

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	TRANSISTOR PANEL STUDY	OCF	SHM	Asbestos AP/PA										
BH12-1		12		X		2	X	X		X										
BH13-1		13		X		1	X	X		X										
BH14-1		14		X		2	X	X		X										
BH15-1		15		X		1	X													
BH16-1		16		X		2	X	X		X										
BH17-1		17		X		1	X													
QCA				X		1			X											
QCI		18		X		1			X											
QCA		19	X			1			X											

Send to ALS

Relinquished By:	Date/Time:	Received By: N SGS Newcastle	Date/Time:
Relinquished By:	Date/Time:	Received By: <i>[Signature]</i>	Date/Time: <u>12/12/24</u> <u>11:45</u>
Samples Intact: <u>Yes</u> / No	Temperature: Ambient / Chilled <u>11.2°C</u> / <u>ice</u>	Sample Cooler Sealed: <u>Yes</u> / No	Laboratory Quotation No:
Comments:			



SAMPLE RECEIPT ADVICE

SE275698

CLIENT DETAILS

Contact James McMahon
Client JM ENVIRONMENTS
Address 37 TOOKE STREET
COOKS HILL NSW 2300

Telephone 0427 893 668
Facsimile (Not specified)
Email james@jmenvironments.com

Project JME24089
Order Number JME24089
Samples 19

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

Samples Received Thu 12/12/2024
Report Due Wed 18/12/2024
SGS Reference SE275698

SUBMISSION DETAILS

This is to confirm that 19 samples were received on Thursday 12/12/2024. Results are expected to be ready by COB Wednesday 18/12/2024. Please quote SGS reference SE275698 when making enquiries. Refer below for details relating to sample integrity upon receipt.

Sample counts by matrix	18 Soil, 1 Water	Type of documentation received	COC
Date documentation received	12/12/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.2C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		

Unless otherwise instructed, water and bulk samples will be held for one month from date of report, and soil samples will be held for two months.

COMMENTS

QC1A sent to ALS.

This document is issued by the Company under its General Conditions of Service accessible at www.sgs.com/en/Terms-and-Conditions.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.



SAMPLE RECEIPT ADVICE

SE275698

CLIENT DETAILS

Client **JM ENVIRONMENTS**

Project **JME24089**

SUMMARY OF ANALYSIS

No.	Sample ID	OC Pesticides in Soil	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	Speciated Phenols in Soil	Total Recoverable Elements in Soil/Waste	TRH (Total Recoverable Hydrocarbons) in Soil	VOC's in Soil	Volatile Petroleum Hydrocarbons in Soil
001	BH1-1	-	26	-	7	10	11	7
002	BH2-1	27	26	-	7	10	11	7
003	BH3-1	-	26	-	7	10	11	7
004	BH4-1	-	26	-	7	10	11	7
005	BH5-1	27	26	-	7	10	11	7
006	BH6-1	-	26	-	7	10	11	7
007	BH7-1	-	26	-	7	10	11	7
008	BH8-1	-	26	-	7	10	11	7
009	BH9-1	-	26	18	7	10	79	7
010	BH10-1	27	26	-	7	10	11	7
011	BH11-1	-	26	-	7	10	11	7
012	BH12-1	27	26	-	7	10	11	7
013	BH13-1	-	26	-	7	10	11	7
014	BH14-1	27	26	-	7	10	11	7
015	BH15-1	-	26	-	7	10	11	7
016	BH16-1	27	26	-	7	10	11	7
017	BH17-1	-	26	-	7	10	11	7
018	QC1	-	-	-	7	-	-	-

CONTINUED OVERLEAF

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



SAMPLE RECEIPT ADVICE

SE275698

CLIENT DETAILS

Client **JM ENVIRONMENTS**

Project **JME24089**

SUMMARY OF ANALYSIS

No.	Sample ID	Fibre Identification in soil	Gravimetric Determination of Asbestos in Soil	Mercury in Soil	Moisture Content	Trace Metals (Dissolved) in Water by ICPMS
001	BH1-1	-	-	1	1	-
002	BH2-1	-	-	1	1	-
003	BH3-1	-	-	1	1	-
004	BH4-1	-	-	1	1	-
005	BH5-1	-	-	1	1	-
006	BH6-1	-	-	1	1	-
007	BH7-1	-	-	1	1	-
008	BH8-1	-	-	1	1	-
009	BH9-1	-	-	1	1	-
010	BH10-1	3	10	1	1	-
011	BH11-1	-	-	1	1	-
012	BH12-1	3	10	1	1	-
013	BH13-1	-	-	1	1	-
014	BH14-1	3	10	1	1	-
015	BH15-1	-	-	1	1	-
016	BH16-1	3	10	1	1	-
017	BH17-1	-	-	1	1	-
018	QC1	-	-	1	1	-
019	QCA	-	-	-	-	7

CONTINUED OVERLEAF

The above table represents SGS' interpretation of the client-supplied Chain Of Custody document.

The numbers shown in the table indicate the number of results requested in each package.

Please indicate as soon as possible should your request differ from these details .

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



SAMPLE RECEIPT ADVICE

SE275698

CLIENT DETAILS

Client JM ENVIRONMENTS

Project JME24089

SUMMARY OF ANALYSIS

		Mercury (dissolved) in Water
No.	Sample ID	
019	QCA	1

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

CLIENT DETAILS

Contact James McMahon
Client JM ENVIRONMENTS
Address 37 TOOKE STREET
COOKS HILL NSW 2300

Telephone 0427 893 668
Facsimile (Not specified)
Email james@jmenvironments.com

Project JME24089
Order Number JME24089
Samples 19

LABORATORY DETAILS

Manager Shane McDermott
Laboratory SGS Alexandria Environmental
Address Unit 16, 33 Maddox St
Alexandria NSW 2015

Telephone +61 2 8594 0400
Facsimile +61 2 8594 0499
Email au.environmental.sydney@sgs.com

SGS Reference SE275698 R0
Date Received 12/12/2024
Date Reported 18/12/2024

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES



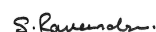
Bennet LO
Senior Chemist



Dong LIANG
Metals/Inorganics Team Leader



Ly Kim HA
Organic Section Head



Ravee SIVASUBRAMANIAM
Hygiene Team Leader



Shane MCDERMOTT
Laboratory Manager

VOC's in Soil [AN433] Tested: 12/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	-	-
Chloromethane	mg/kg	1	-	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	-	-
Bromomethane	mg/kg	1	-	-	-	-	-
Chloroethane	mg/kg	1	-	-	-	-	-
Trichlorofluoromethane	mg/kg	1	-	-	-	-	-
Acetone (2-propanone)	mg/kg	10	-	-	-	-	-
Iodomethane	mg/kg	5	-	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	-	-
Acrylonitrile	mg/kg	0.1	-	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	-	-
Allyl chloride	mg/kg	0.1	-	-	-	-	-
Carbon disulfide	mg/kg	0.5	-	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	-	-
Vinyl acetate*	mg/kg	10	-	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	-	-
Bromochloromethane	mg/kg	0.1	-	-	-	-	-
Chloroform (THM)	mg/kg	0.1	-	-	-	-	-
2,2-dichloropropane	mg/kg	0.1	-	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	-	-
Dibromomethane	mg/kg	0.1	-	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	-	-
Chlorobenzene	mg/kg	0.1	-	-	-	-	-
Bromoform (THM)	mg/kg	0.1	-	-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
n-propylbenzene	mg/kg	0.1	-	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-	-	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	<1	-
Chloromethane	mg/kg	1	-	-	-	<1	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	<0.1	-
Bromomethane	mg/kg	1	-	-	-	<1	-
Chloroethane	mg/kg	1	-	-	-	<1	-
Trichlorofluoromethane	mg/kg	1	-	-	-	<1	-
Acetone (2-propanone)	mg/kg	10	-	-	-	<10	-
Iodomethane	mg/kg	5	-	-	-	<5	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	<0.1	-
Acrylonitrile	mg/kg	0.1	-	-	-	<0.1	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	<0.5	-
Allyl chloride	mg/kg	0.1	-	-	-	<0.1	-
Carbon disulfide	mg/kg	0.5	-	-	-	<0.5	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	<0.1	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	<0.1	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	<0.1	-
Vinyl acetate*	mg/kg	10	-	-	-	<10	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	<0.1	-
Bromochloromethane	mg/kg	0.1	-	-	-	<0.1	-
Chloroform (THM)	mg/kg	0.1	-	-	-	<0.1	-
2,2-dichloropropane	mg/kg	0.1	-	-	-	<0.1	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	<0.1	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	<0.1	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	<0.1	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	<0.1	-
Dibromomethane	mg/kg	0.1	-	-	-	<0.1	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	<0.1	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	-	-	<0.1	-
2-nitropropane	mg/kg	10	-	-	-	<10	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-	-	<0.1	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	<1	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	<0.1	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	<0.1	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	<0.1	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	<0.1	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-	-	<0.1	-
2-hexanone (MBK)	mg/kg	5	-	-	-	<5	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	<0.1	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	<0.1	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	<0.1	-
Chlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
Bromoform (THM)	mg/kg	0.1	-	-	-	<0.1	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	<0.1	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	<0.1	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	<0.1	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	<1	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	<0.1	-
Bromobenzene	mg/kg	0.1	-	-	-	<0.1	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
n-propylbenzene	mg/kg	0.1	-	-	-	<0.1	-
2-chlorotoluene	mg/kg	0.1	-	-	-	<0.1	-
4-chlorotoluene	mg/kg	0.1	-	-	-	<0.1	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	<0.1	-
tert-butylbenzene	mg/kg	0.1	-	-	-	<0.1	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	<0.1	-
sec-butylbenzene	mg/kg	0.1	-	-	-	<0.1	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	<0.1	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
n-butylbenzene	mg/kg	0.1	-	-	-	<0.1	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	<0.1	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	<0.1	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	<0.1	-
Total VOC*	mg/kg	24	-	-	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-	-	<3.0	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	<1.8	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	<1.8	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
Benzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6	<0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-	-	-	-
Chloromethane	mg/kg	1	-	-	-	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-	-	-	-
Bromomethane	mg/kg	1	-	-	-	-	-
Chloroethane	mg/kg	1	-	-	-	-	-
Trichlorofluoromethane	mg/kg	1	-	-	-	-	-
Acetone (2-propanone)	mg/kg	10	-	-	-	-	-
Iodomethane	mg/kg	5	-	-	-	-	-
1,1-dichloroethene	mg/kg	0.1	-	-	-	-	-
Acrylonitrile	mg/kg	0.1	-	-	-	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-	-	-	-
Allyl chloride	mg/kg	0.1	-	-	-	-	-
Carbon disulfide	mg/kg	0.5	-	-	-	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-	-	-	-
MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-	-	-	-
1,1-dichloroethane	mg/kg	0.1	-	-	-	-	-
Vinyl acetate*	mg/kg	10	-	-	-	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-	-	-	-
Bromochloromethane	mg/kg	0.1	-	-	-	-	-
Chloroform (THM)	mg/kg	0.1	-	-	-	-	-
2,2-dichloropropane	mg/kg	0.1	-	-	-	-	-
1,2-dichloroethane	mg/kg	0.1	-	-	-	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-	-	-	-
1,1-dichloropropene	mg/kg	0.1	-	-	-	-	-
Carbon tetrachloride	mg/kg	0.1	-	-	-	-	-
Dibromomethane	mg/kg	0.1	-	-	-	-	-
1,2-dichloropropane	mg/kg	0.1	-	-	-	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	-	-	-	-
2-nitropropane	mg/kg	10	-	-	-	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-	-	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-	-	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-	-	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-	-	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-	-	-	-
1,3-dichloropropane	mg/kg	0.1	-	-	-	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-	-	-	-
2-hexanone (MBK)	mg/kg	5	-	-	-	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-	-	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-	-	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-	-	-	-
Chlorobenzene	mg/kg	0.1	-	-	-	-	-
Bromoform (THM)	mg/kg	0.1	-	-	-	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-	-	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-	-	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-	-	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-	-	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-	-	-	-
Bromobenzene	mg/kg	0.1	-	-	-	-	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
n-propylbenzene	mg/kg	0.1	-	-	-	-	-
2-chlorotoluene	mg/kg	0.1	-	-	-	-	-
4-chlorotoluene	mg/kg	0.1	-	-	-	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-	-	-	-
tert-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-	-	-	-
sec-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
p-isopropyltoluene	mg/kg	0.1	-	-	-	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-	-	-	-
n-butylbenzene	mg/kg	0.1	-	-	-	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-	-	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-	-	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-	-	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-	-	-	-
Total VOC*	mg/kg	24	-	-	-	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-	-	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-	-	-	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH16-1	BH17-1
			SOIL - 11/12/2024 SE275698.016	SOIL - 11/12/2024 SE275698.017
Benzene	mg/kg	0.1	<0.1	<0.1
Toluene	mg/kg	0.1	<0.1	<0.1
Ethylbenzene	mg/kg	0.1	<0.1	<0.1
m/p-xylene	mg/kg	0.2	<0.2	<0.2
o-xylene	mg/kg	0.1	<0.1	<0.1
Total Xylenes*	mg/kg	0.3	<0.3	<0.3
Total BTEX*	mg/kg	0.6	<0.6	<0.6
Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1
Dichlorodifluoromethane (CFC-12)	mg/kg	1	-	-
Chloromethane	mg/kg	1	-	-
Vinyl chloride (Chloroethene)	mg/kg	0.1	-	-
Bromomethane	mg/kg	1	-	-
Chloroethane	mg/kg	1	-	-
Trichlorofluoromethane	mg/kg	1	-	-
Acetone (2-propanone)	mg/kg	10	-	-
Iodomethane	mg/kg	5	-	-
1,1-dichloroethene	mg/kg	0.1	-	-
Acrylonitrile	mg/kg	0.1	-	-
Dichloromethane (Methylene chloride)	mg/kg	0.5	-	-
Allyl chloride	mg/kg	0.1	-	-
Carbon disulfide	mg/kg	0.5	-	-
trans-1,2-dichloroethene	mg/kg	0.1	-	-
MIBE (Methyl-tert-butyl ether)	mg/kg	0.1	-	-
1,1-dichloroethane	mg/kg	0.1	-	-
Vinyl acetate*	mg/kg	10	-	-
cis-1,2-dichloroethene	mg/kg	0.1	-	-
Bromochloromethane	mg/kg	0.1	-	-
Chloroform (THM)	mg/kg	0.1	-	-
2,2-dichloropropane	mg/kg	0.1	-	-
1,2-dichloroethane	mg/kg	0.1	-	-
1,1,1-trichloroethane	mg/kg	0.1	-	-
1,1-dichloropropene	mg/kg	0.1	-	-
Carbon tetrachloride	mg/kg	0.1	-	-
Dibromomethane	mg/kg	0.1	-	-
1,2-dichloropropane	mg/kg	0.1	-	-
Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	-	-
2-nitropropane	mg/kg	10	-	-
Bromodichloromethane (THM)	mg/kg	0.1	-	-
MIBK (4-methyl-2-pentanone)	mg/kg	1	-	-
cis-1,3-dichloropropene	mg/kg	0.1	-	-
trans-1,3-dichloropropene	mg/kg	0.1	-	-
1,1,2-trichloroethane	mg/kg	0.1	-	-
1,3-dichloropropane	mg/kg	0.1	-	-
Dibromochloromethane (THM)	mg/kg	0.1	-	-
2-hexanone (MBK)	mg/kg	5	-	-
1,2-dibromoethane (EDB)	mg/kg	0.1	-	-
Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	-	-
1,1,1,2-tetrachloroethane	mg/kg	0.1	-	-
Chlorobenzene	mg/kg	0.1	-	-
Bromoform (THM)	mg/kg	0.1	-	-
Styrene (Vinyl benzene)	mg/kg	0.1	-	-
1,1,2,2-tetrachloroethane	mg/kg	0.1	-	-
1,2,3-trichloropropane	mg/kg	0.1	-	-
trans-1,4-dichloro-2-butene	mg/kg	1	-	-
Isopropylbenzene (Cumene)	mg/kg	0.1	-	-
Bromobenzene	mg/kg	0.1	-	-

VOC's in Soil [AN433] Tested: 12/12/2024 (continued)

PARAMETER	UOM	LOR	BH16-1	BH17-1
			SOIL	SOIL
			- 11/12/2024 SE275698.016	- 11/12/2024 SE275698.017
n-propylbenzene	mg/kg	0.1	-	-
2-chlorotoluene	mg/kg	0.1	-	-
4-chlorotoluene	mg/kg	0.1	-	-
1,3,5-trimethylbenzene	mg/kg	0.1	-	-
tert-butylbenzene	mg/kg	0.1	-	-
1,2,4-trimethylbenzene	mg/kg	0.1	-	-
sec-butylbenzene	mg/kg	0.1	-	-
1,3-dichlorobenzene	mg/kg	0.1	-	-
1,4-dichlorobenzene	mg/kg	0.1	-	-
p-isopropyltoluene	mg/kg	0.1	-	-
1,2-dichlorobenzene	mg/kg	0.1	-	-
n-butylbenzene	mg/kg	0.1	-	-
1,2-dibromo-3-chloropropane	mg/kg	0.1	-	-
1,2,4-trichlorobenzene	mg/kg	0.1	-	-
Hexachlorobutadiene	mg/kg	0.1	-	-
1,2,3-trichlorobenzene	mg/kg	0.1	-	-
Total VOC*	mg/kg	24	-	-
Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	-	-
Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-
Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	-	-

Volatile Petroleum Hydrocarbons in Soil [AN433] Tested: 12/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH8-1	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
TRH C6-C9	mg/kg	20	<20	<20	<20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25	<25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	<25	<25	<25

PARAMETER	UOM	LOR	BH16-1	BH17-1
			SOIL	SOIL
			-	-
			11/12/2024 SE275698.016	11/12/2024 SE275698.017
TRH C6-C9	mg/kg	20	<20	<20
Benzene (F0)	mg/kg	0.1	<0.1	<0.1
TRH C6-C10	mg/kg	25	<25	<25
TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 13/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	<45	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	<45	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
TRH C10-C14	mg/kg	20	<20	<20	<20	29	<20
TRH C15-C28	mg/kg	45	<45	<45	<45	9700	<45
TRH C29-C36	mg/kg	45	<45	<45	<45	9300	<45
TRH C37-C40	mg/kg	100	<100	<100	<100	2400	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	39	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	39	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90	<90	17000	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	4900	<120
TRH C10-C36 Total	mg/kg	110	<110	<110	<110	19000	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	22000	<210

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
TRH C10-C14	mg/kg	20	<20	<20	<20	<20	<20
TRH C15-C28	mg/kg	45	<45	53	<45	<45	100
TRH C29-C36	mg/kg	45	<45	64	63	<45	180
TRH C37-C40	mg/kg	100	<100	<100	<100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25	<25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	<25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	97	<90	<90	200
TRH >C34-C40 (F4)	mg/kg	120	<120	<120	<120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	120	<110	<110	280
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	<210	<210	<210

TRH (Total Recoverable Hydrocarbons) in Soil [AN403] Tested: 13/12/2024 (continued)

PARAMETER	UOM	LOR	BH16-1	BH17-1
			SOIL	SOIL
			- 11/12/2024 SE275698.016	- 11/12/2024 SE275698.017
TRH C10-C14	mg/kg	20	<20	<20
TRH C15-C28	mg/kg	45	<45	<45
TRH C29-C36	mg/kg	45	56	<45
TRH C37-C40	mg/kg	100	<100	<100
TRH >C10-C16	mg/kg	25	<25	<25
TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25
TRH >C16-C34 (F3)	mg/kg	90	<90	<90
TRH >C34-C40 (F4)	mg/kg	120	<120	<120
TRH C10-C36 Total	mg/kg	110	<110	<110
TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 13/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	0.3	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.4	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	1.6	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	1.6	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	0.5	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1	<0.1	0.6	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.6	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	<0.1	0.8	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	0.7	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	<0.1	1.0	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	0.9	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3	<0.3	1.1	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2	<0.2	1.0	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8	<0.8	8.4	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8	<0.8	7.7	<0.8

PAH (Polynuclear Aromatic Hydrocarbons) in Soil [AN420] Tested: 13/12/2024 (continued)

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
Naphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	0.5	<0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	0.2	0.5	0.2	<0.1	0.1
Pyrene	mg/kg	0.1	0.2	0.7	0.2	<0.1	0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	0.3	<0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	0.2	<0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	0.3	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	0.1	<0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	0.1	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	0.3	<0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	0.4	<0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	0.4	<0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	3.0	<0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	3.0	<0.8	<0.8	<0.8

PARAMETER	UOM	LOR	BH16-1	BH17-1
			SOIL	SOIL
			11/12/2024 SE275698.016	11/12/2024 SE275698.017
Naphthalene	mg/kg	0.1	<0.1	<0.1
2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1
Acenaphthylene	mg/kg	0.1	<0.1	<0.1
Acenaphthene	mg/kg	0.1	<0.1	<0.1
Fluorene	mg/kg	0.1	<0.1	<0.1
Phenanthrene	mg/kg	0.1	<0.1	<0.1
Anthracene	mg/kg	0.1	<0.1	<0.1
Fluoranthene	mg/kg	0.1	<0.1	<0.1
Pyrene	mg/kg	0.1	<0.1	<0.1
Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1
Chrysene	mg/kg	0.1	<0.1	<0.1
Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1
Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1
Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1
Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1
Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1
Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	<0.2	<0.2
Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	<0.3	<0.3
Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	<0.2	<0.2
Total PAH (18)	mg/kg	0.8	<0.8	<0.8
Total PAH (NEPM/WHO 16)	mg/kg	0.8	<0.8	<0.8

OC Pesticides in Soil [AN420] Tested: 13/12/2024

PARAMETER	UOM	LOR	BH2-1	BH5-1	BH10-1	BH12-1	BH14-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.002	11/12/2024 SE275698.005	11/12/2024 SE275698.010	11/12/2024 SE275698.012	11/12/2024 SE275698.014
Alpha BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Aldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Chlordane (alpha + gamma chlordane)	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Dieldrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDD	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Mirex	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total OC Pesticides	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total OC VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Other OCP VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	<0.1	<0.1	<0.1

OC Pesticides in Soil [AN420] Tested: 13/12/2024 (continued)

			BH16-1
			SOIL
			-
			11/12/2024
			SE275698.016
PARAMETER	UOM	LOR	
Alpha BHC	mg/kg	0.1	<0.1
Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
Beta BHC	mg/kg	0.1	<0.1
Lindane (gamma BHC)	mg/kg	0.1	<0.1
Delta BHC	mg/kg	0.1	<0.1
Heptachlor	mg/kg	0.1	<0.1
Aldrin	mg/kg	0.1	<0.1
Heptachlor epoxide	mg/kg	0.1	<0.1
Gamma Chlordane	mg/kg	0.1	<0.1
Alpha Chlordane	mg/kg	0.1	<0.1
Chlordane (alpha + gamma chlordane)	mg/kg	0.1	<0.1
Alpha Endosulfan	mg/kg	0.1	<0.1
p,p'-DDE	mg/kg	0.1	<0.1
Dieldrin	mg/kg	0.1	<0.1
Endrin	mg/kg	0.1	<0.1
Endrin aldehyde	mg/kg	0.1	<0.1
Beta Endosulfan	mg/kg	0.1	<0.1
p,p'-DDD	mg/kg	0.1	<0.1
Endosulfan sulphate	mg/kg	0.1	<0.1
p,p'-DDT	mg/kg	0.1	<0.1
Endrin ketone	mg/kg	0.1	<0.1
Methoxychlor	mg/kg	0.1	<0.1
Mirex	mg/kg	0.1	<0.1
Total OC Pesticides	mg/kg	0.1	<0.1
Total OC VIC EPA IWRG621	mg/kg	0.1	<0.1
Total Other OCP VIC EPA IWRG621	mg/kg	0.1	<0.1

Speciated Phenols in Soil [AN420] Tested: 13/12/2024

			BH9-1
			SOIL
			-
			11/12/2024
			SE275698.009
PARAMETER	UOM	LOR	
Phenol	mg/kg	0.5	1.1
2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
Total Cresol	mg/kg	1.5	<1.5
2-chlorophenol	mg/kg	0.5	<0.5
2,4-dimethylphenol	mg/kg	0.5	<0.5
2,6-dichlorophenol	mg/kg	0.5	<0.5
2,4-dichlorophenol	mg/kg	0.5	1.1
2,4,6-trichlorophenol	mg/kg	0.5	1.1
2-nitrophenol	mg/kg	0.5	<0.5
4-nitrophenol	mg/kg	1	<1
2,4,5-trichlorophenol	mg/kg	0.5	0.9
Pentachlorophenol	mg/kg	0.5	1.2
2,4-dinitrophenol	mg/kg	2	<2
2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
4-chloro-3-methylphenol	mg/kg	2	<2

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES [AN040/AN320] Tested: 12/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
Arsenic, As	mg/kg	1	1	<1	<1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<0.5	0.6	0.8	0.7	<0.5
Copper, Cu	mg/kg	0.5	<0.5	<0.5	<0.5	0.9	<0.5
Lead, Pb	mg/kg	1	<1	<1	<1	12	<1
Nickel, Ni	mg/kg	0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Zinc, Zn	mg/kg	2	<2.0	<2.0	<2.0	13	<2.0

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
Arsenic, As	mg/kg	1	<1	<1	<1	3	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	<0.5	0.5	0.7	5.8	3.8
Copper, Cu	mg/kg	0.5	<0.5	<0.5	<0.5	3.7	6.1
Lead, Pb	mg/kg	1	2	<1	<1	5	98
Nickel, Ni	mg/kg	0.5	<0.5	<0.5	<0.5	2.4	0.9
Zinc, Zn	mg/kg	2	<2.0	<2.0	2.5	20	450

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
Arsenic, As	mg/kg	1	<1	<1	2	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	1.3	5.2	6.1	3.7	1.5
Copper, Cu	mg/kg	0.5	4.2	6.3	6.4	11	2.9
Lead, Pb	mg/kg	1	45	11	8	89	7
Nickel, Ni	mg/kg	0.5	0.6	2.6	2.8	1.6	0.5
Zinc, Zn	mg/kg	2	53	84	38	140	19

PARAMETER	UOM	LOR	BH16-1	BH17-1	QC1
			SOIL	SOIL	SOIL
			11/12/2024 SE275698.016	11/12/2024 SE275698.017	11/12/2024 SE275698.018
Arsenic, As	mg/kg	1	1	<1	<1
Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	<0.3
Chromium, Cr	mg/kg	0.5	6.6	3.6	<0.5
Copper, Cu	mg/kg	0.5	9.5	3.5	<0.5
Lead, Pb	mg/kg	1	59	4	<1
Nickel, Ni	mg/kg	0.5	2.9	1.8	<0.5
Zinc, Zn	mg/kg	2	79	18	<2.0

Mercury in Soil [AN312] Tested: 12/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
Mercury	mg/kg	0.05	1.3	<0.05	<0.05	<0.05	<0.05

PARAMETER	UOM	LOR	BH16-1	BH17-1	QC1
			SOIL	SOIL	SOIL
			-	-	-
			11/12/2024 SE275698.016	11/12/2024 SE275698.017	11/12/2024 SE275698.018
Mercury	mg/kg	0.05	<0.05	<0.05	<0.05

Moisture Content [AN002] Tested: 12/12/2024

PARAMETER	UOM	LOR	BH1-1	BH2-1	BH3-1	BH4-1	BH5-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.001	11/12/2024 SE275698.002	11/12/2024 SE275698.003	11/12/2024 SE275698.004	11/12/2024 SE275698.005
% Moisture	%w/w	1	7.3	3.2	3.7	3.0	3.8

PARAMETER	UOM	LOR	BH6-1	BH7-1	BH81	BH9-1	BH10-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.006	11/12/2024 SE275698.007	11/12/2024 SE275698.008	11/12/2024 SE275698.009	11/12/2024 SE275698.010
% Moisture	%w/w	1	3.5	4.6	2.0	5.6	13.5

PARAMETER	UOM	LOR	BH11-1	BH12-1	BH13-1	BH14-1	BH15-1
			SOIL	SOIL	SOIL	SOIL	SOIL
			-	-	-	-	-
			11/12/2024 SE275698.011	11/12/2024 SE275698.012	11/12/2024 SE275698.013	11/12/2024 SE275698.014	11/12/2024 SE275698.015
% Moisture	%w/w	1	3.6	1.6	4.4	3.1	8.0

PARAMETER	UOM	LOR	BH16-1	BH17-1	QC1
			SOIL	SOIL	SOIL
			-	-	-
			11/12/2024 SE275698.016	11/12/2024 SE275698.017	11/12/2024 SE275698.018
% Moisture	%w/w	1	2.9	2.2	5.5



ANALYTICAL RESULTS

SE275698 R0

Fibre Identification in soil [AS4964/AN602] Tested: 13/12/2024

			BH10-1	BH12-1	BH14-1	BH16-1
			SOIL	SOIL	SOIL	SOIL
			-	-	-	-
			11/12/2024	11/12/2024	11/12/2024	11/12/2024
			SE275698.010	SE275698.012	SE275698.014	SE275698.016
PARAMETER	UOM	LOR				
Asbestos Detected	No unit	-	No	No	No	No
Estimated Fibres*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01
Date Analysed*	No unit	-	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 13/12/2024

PARAMETER	UOM	LOR	BH10-1	BH12-1	BH14-1	BH16-1
			SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.010	11/12/2024 SE275698.012	11/12/2024 SE275698.014	11/12/2024 SE275698.016
Date Analysed*	No unit	-	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00
Total Sample Weight*	g	1	563	634	578	519
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD

Trace Metals (Dissolved) in Water by ICPMS [AN318] Tested: 16/12/2024

			QCA
			WATER
			-
			11/12/2024
			SE275698.019
PARAMETER	UOM	LOR	
Arsenic	µg/L	1	<1
Cadmium	µg/L	0.1	<0.1
Copper	µg/L	1	17
Chromium	µg/L	1	<1
Nickel	µg/L	1	<1
Lead	µg/L	1	<1
Zinc	µg/L	5	18



ANALYTICAL RESULTS

SE275698 R0

Mercury (dissolved) in Water [AN311(Perth)/AN312] Tested: 13/12/2024

			QCA
			WATER
			-
			11/12/2024
PARAMETER	UOM	LOR	SE275698.019
Mercury	mg/L	0.0001	<0.0001

METHOD

METHODOLOGY SUMMARY

AN002	The test is carried out by drying (at either 40°C or 105°C) a known mass of sample in a weighed evaporating basin. After fully dry the sample is re-weighed. Samples such as sludge and sediment having high percentages of moisture will take some time in a drying oven for complete removal of water.
AN020	Unpreserved water sample is filtered through a 0.45µm membrane filter and acidified with nitric acid similar to APHA3030B.
AN040/AN320	A portion of sample is digested with nitric acid to decompose organic matter and hydrochloric acid to complete the digestion of metals. The digest is then analysed by ICP OES with metals results reported on the dried sample basis. Based on USEPA method 200.8 and 6010C.
AN040	A portion of sample is digested with Nitric acid to decompose organic matter and Hydrochloric acid to complete the digestion of metals and then filtered for analysis by AAS or ICP as per USEPA Method 200.8.
AN311(Perth)/AN312	Mercury by Cold Vapour AAS in Waters: Mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500.
AN312	Mercury by Cold Vapour AAS in Soils: After digestion with nitric acid, hydrogen peroxide and hydrochloric acid, mercury ions are reduced by stannous chloride reagent in acidic solution to elemental mercury. This mercury vapour is purged by nitrogen into a cold cell in an atomic absorption spectrometer or mercury analyser. Quantification is made by comparing absorbances to those of the calibration standards. Reference APHA 3112/3500
AN318	Determination of elements at trace level in waters by ICP-MS technique,, referenced to USEPA 6020B and USEPA 200.8 (5.4).
AN403	Total Recoverable Hydrocarbons: Determination of Hydrocarbons by gas chromatography after a solvent extraction. Detection is by flame ionisation detector (FID) that produces an electronic signal in proportion to the combustible matter passing through it. Total Recoverable Hydrocarbons (TRH) are routinely reported as four alkane groupings based on the carbon chain length of the compounds: C6-C9, C10-C14, C15-C28 and C29-C36 and in recognition of the NEPM 1999 (2013), >C10-C16 (F2), >C16-C34 (F3) and >C34-C40 (F4). F2 is reported directly and also corrected by subtracting Naphthalene (from VOC method AN433) where available.
AN403	Additionally, the volatile C6-C9 fraction may be determined by a purge and trap technique and GC/MS because of the potential for volatiles loss. Total Recoverable Hydrocarbons - Silica (TRH-Si) follows the same method of analysis after silica gel cleanup of the solvent extract. Aliphatic/Aromatic Speciation follows the same method of analysis after fractionation of the solvent extract over silica with differential polarity of the eluent solvents .
AN403	The GC/FID method is not well suited to the analysis of refined high boiling point materials (ie lubricating oils or greases) but is particularly suited for measuring diesel, kerosene and petrol if care to control volatility is taken . This method will detect naturally occurring hydrocarbons, lipids, animal fats, phenols and PAHs if they are present at sufficient levels, dependent on the use of specific cleanup/fractionation techniques. Reference USEPA 3510B, 8015B.
AN420	(SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols (etc) in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN420	SVOC Compounds: Semi-Volatile Organic Compounds (SVOCs) including OC, OP, PCB, Herbicides, PAH, Phthalates and Speciated Phenols in soils, sediments and waters are determined by GCMS/ECD technique following appropriate solvent extraction process (Based on USEPA 3500C and 8270D).
AN433	VOCs and C6-C9 Hydrocarbons by GC-MS P&T: VOC's are volatile organic compounds. The sample is presented to a gas chromatograph via a purge and trap (P&T) concentrator and autosampler and is detected with a Mass Spectrometer (MSD). Solid samples are initially extracted with methanol whilst liquid samples are processed directly. References: USEPA 5030B, 8020A, 8260.
AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.

AN602/AS4964

AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."

AN602/AS4964

The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if-

- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres);
- (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and
- (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.

AN605

This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.

AN605

This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.

AN605

Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition.
Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material.
Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.

AN-605

Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

*	NATA accreditation does not cover the performance of this service.	-	Not analysed.	UOM	Unit of Measure.
**	Indicative data, theoretical holding time exceeded.	NVL	Not validated.	LOR	Limit of Reporting.
***	Indicates that both * and ** apply.	IS	Insufficient sample for analysis.	↑↓	Raised/lowered Limit of Reporting.
		LNR	Sample listed, but not received.		

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.
Solid samples expressed on a dry weight basis.

Where "Total" analyte groups are reported (for example, Total PAHs, Total OC Pesticides) the total will be calculated as the sum of the individual analytes, with those analytes that are reported as <LOR being assumed to be zero. The summed (Total) limit of reporting is calculated by summing the individual analyte LORs and dividing by two. For example, where 16 individual analytes are being summed and each has an LOR of 0.1 mg/kg, the "Totals" LOR will be $1.6 / 2$ (0.8 mg/kg). Where only 2 analytes are being summed, the "Total" LOR will be the sum of those two LORs.

Some totals may not appear to add up because the total is rounded after adding up the raw values.

If reported, measurement uncertainty follow the $\pm$ sign after the analytical result and is expressed as the expanded uncertainty calculated using a coverage factor of 2, providing a level of confidence of approximately 95%, unless stated otherwise in the comments section of this report.

Results reported for samples tested under test methods with codes starting with ARS-SOP, radionuclide or gross radioactivity concentrations are expressed in becquerel (Bq) per unit of mass or volume or per wipe as stated on the report. Becquerel is the SI unit for activity and equals one nuclear transformation per second.

Note that in terms of units of radioactivity:

- 1 Bq is equivalent to 27 pCi
- 37 MBq is equivalent to 1 mCi

For results reported for samples tested under test methods with codes starting with ARS-SOP, less than (<) values indicate the detection limit for each radionuclide or parameter for the measurement system used. The respective detection limits have been calculated in accordance with ISO 11929.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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STATEMENT OF QA/QC PERFORMANCE

SE275698 R0

CLIENT DETAILS

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Project JME24089
Order Number JME24089
Samples 19

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SGS Reference SE275698 R0
Date Received 12 Dec 2024
Date Reported 18 Dec 2024

COMMENTS

All the laboratory data for each environmental matrix was compared to SGS' stated Data Quality Objectives (DQO). Comments arising from the comparison were made and are reported below.

The data relating to sampling was taken from the Chain of Custody document.

This QA/QC Statement must be read in conjunction with the referenced Analytical Report.

The Statement and the Analytical Report must not be reproduced except in full.

All Data Quality Objectives were met with the exception of the following:

Surrogate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	3 items
	Speciated Phenols in Soil	1 item
Duplicate	PAH (Polynuclear Aromatic Hydrocarbons) in Soil	13 items

SAMPLE SUMMARY

Sample counts by matrix	18 Soil, 1 Water	Type of documentation received	COC
Date documentation received	12/12/2024	Samples received in good order	Yes
Samples received without headspace	Yes	Sample temperature upon receipt	11.2C
Sample container provider	SGS	Turnaround time requested	Standard
Samples received in correct containers	Yes	Sufficient sample for analysis	Yes
Sample cooling method	Ice	Samples clearly labelled	Yes
Complete documentation received	Yes		



HOLDING TIME SUMMARY

SE275698 R0

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Fibre Identification in soil

Method: ME-(AU)-[ENV]AS4964/AN602

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10-1	SE275698.010	LB333203	11 Dec 2024	12 Dec 2024	11 Dec 2025	13 Dec 2024	11 Dec 2025	18 Dec 2024
BH12-1	SE275698.012	LB333203	11 Dec 2024	12 Dec 2024	11 Dec 2025	13 Dec 2024	11 Dec 2025	18 Dec 2024
BH14-1	SE275698.014	LB333203	11 Dec 2024	12 Dec 2024	11 Dec 2025	13 Dec 2024	11 Dec 2025	18 Dec 2024
BH16-1	SE275698.016	LB333203	11 Dec 2024	12 Dec 2024	11 Dec 2025	13 Dec 2024	11 Dec 2025	18 Dec 2024

Gravimetric Determination of Asbestos in Soil

Method: ME-(AU)-[ENV]AN605

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH10-1	SE275698.010	LB333203	11 Dec 2024	12 Dec 2024	09 Jun 2025	13 Dec 2024	09 Jun 2025	18 Dec 2024
BH12-1	SE275698.012	LB333203	11 Dec 2024	12 Dec 2024	09 Jun 2025	13 Dec 2024	09 Jun 2025	18 Dec 2024
BH14-1	SE275698.014	LB333203	11 Dec 2024	12 Dec 2024	09 Jun 2025	13 Dec 2024	09 Jun 2025	18 Dec 2024
BH16-1	SE275698.016	LB333203	11 Dec 2024	12 Dec 2024	09 Jun 2025	13 Dec 2024	09 Jun 2025	18 Dec 2024

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QCA	SE275698.019	LB333140	11 Dec 2024	12 Dec 2024	08 Jan 2025	13 Dec 2024	08 Jan 2025	16 Dec 2024

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH2-1	SE275698.002	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH3-1	SE275698.003	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH4-1	SE275698.004	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH5-1	SE275698.005	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH6-1	SE275698.006	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH7-1	SE275698.007	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH81	SE275698.008	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH9-1	SE275698.009	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH10-1	SE275698.010	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH11-1	SE275698.011	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH12-1	SE275698.012	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH13-1	SE275698.013	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH14-1	SE275698.014	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH15-1	SE275698.015	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH16-1	SE275698.016	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
BH17-1	SE275698.017	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024
QC1	SE275698.018	LB333098	11 Dec 2024	12 Dec 2024	08 Jan 2025	12 Dec 2024	08 Jan 2025	17 Dec 2024

Moisture Content

Method: ME-(AU)-[ENV]AN002

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH2-1	SE275698.002	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH3-1	SE275698.003	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH4-1	SE275698.004	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH5-1	SE275698.005	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH6-1	SE275698.006	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH7-1	SE275698.007	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH81	SE275698.008	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH9-1	SE275698.009	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH10-1	SE275698.010	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH11-1	SE275698.011	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH12-1	SE275698.012	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH13-1	SE275698.013	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH14-1	SE275698.014	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH15-1	SE275698.015	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH16-1	SE275698.016	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
BH17-1	SE275698.017	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024
QC1	SE275698.018	LB333096	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	17 Dec 2024	16 Dec 2024

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Name	Sample No.	QC Ref
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SGS holding time criteria are drawn from current regulations and are highly dependent on sample container preservation as specified in the SGS "Field Sampling Guide for Containers and Holding Time" (ref: GU-(AU)-ENV.001). Soil samples guidelines are derived from NEPM "Schedule B(3) Guideline on Laboratory Analysis of Potentially Contaminated Soils". Water sample guidelines are derived from "AS/NZS 5667.1 : 1998 Water Quality - sampling part 1" and APHA "Standard Methods for the Examination of Water and Wastewater" 21st edition 2005.

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH2-1	SE275698.002	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH3-1	SE275698.003	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH4-1	SE275698.004	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH5-1	SE275698.005	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH6-1	SE275698.006	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH7-1	SE275698.007	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH81	SE275698.008	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH9-1	SE275698.009	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH10-1	SE275698.010	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH11-1	SE275698.011	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH12-1	SE275698.012	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH13-1	SE275698.013	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH14-1	SE275698.014	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH15-1	SE275698.015	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024
BH16-1	SE275698.016	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH17-1	SE275698.017	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	17 Dec 2024

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH2-1	SE275698.002	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH3-1	SE275698.003	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH4-1	SE275698.004	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH5-1	SE275698.005	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH6-1	SE275698.006	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH7-1	SE275698.007	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH81	SE275698.008	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH9-1	SE275698.009	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH10-1	SE275698.010	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH11-1	SE275698.011	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH12-1	SE275698.012	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH13-1	SE275698.013	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH14-1	SE275698.014	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH15-1	SE275698.015	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH16-1	SE275698.016	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH17-1	SE275698.017	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024

Speciated Phenols in Soil

Method: ME-(AU)-ENVJAN420

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH9-1	SE275698.009	LB333202	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	18 Dec 2024

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

Method: ME-(AU)-ENVJAN040/AN320

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH2-1	SE275698.002	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH3-1	SE275698.003	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH4-1	SE275698.004	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH5-1	SE275698.005	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH6-1	SE275698.006	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH7-1	SE275698.007	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH81	SE275698.008	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH9-1	SE275698.009	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH10-1	SE275698.010	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH11-1	SE275698.011	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH12-1	SE275698.012	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH13-1	SE275698.013	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH14-1	SE275698.014	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH15-1	SE275698.015	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
BH16-1	SE275698.016	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024



HOLDING TIME SUMMARY

SE275698 R0

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES (continued)

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

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH17-1	SE275698.017	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024
QC1	SE275698.018	LB333097	11 Dec 2024	12 Dec 2024	09 Jun 2025	12 Dec 2024	09 Jun 2025	16 Dec 2024

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
QCA	SE275698.019	LB333325	11 Dec 2024	12 Dec 2024	09 Jun 2025	16 Dec 2024	09 Jun 2025	17 Dec 2024

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH2-1	SE275698.002	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH3-1	SE275698.003	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH4-1	SE275698.004	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH5-1	SE275698.005	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH6-1	SE275698.006	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH7-1	SE275698.007	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH81	SE275698.008	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH9-1	SE275698.009	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH10-1	SE275698.010	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH11-1	SE275698.011	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH12-1	SE275698.012	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH13-1	SE275698.013	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH14-1	SE275698.014	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH15-1	SE275698.015	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH16-1	SE275698.016	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024
BH17-1	SE275698.017	LB333095	11 Dec 2024	12 Dec 2024	25 Dec 2024	13 Dec 2024	22 Jan 2025	16 Dec 2024

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH2-1	SE275698.002	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH3-1	SE275698.003	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH4-1	SE275698.004	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH5-1	SE275698.005	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH6-1	SE275698.006	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH7-1	SE275698.007	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH81	SE275698.008	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH9-1	SE275698.009	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH10-1	SE275698.010	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH11-1	SE275698.011	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH12-1	SE275698.012	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH13-1	SE275698.013	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH14-1	SE275698.014	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH15-1	SE275698.015	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH16-1	SE275698.016	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH17-1	SE275698.017	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH1-1	SE275698.001	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH2-1	SE275698.002	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH3-1	SE275698.003	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH4-1	SE275698.004	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH5-1	SE275698.005	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH6-1	SE275698.006	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH7-1	SE275698.007	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH81	SE275698.008	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH9-1	SE275698.009	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH10-1	SE275698.010	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH11-1	SE275698.011	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH12-1	SE275698.012	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024

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

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

Extraction and analysis dates are shown in **Green** when within suggested criteria or **Red** with an appended dagger symbol (†) when outside suggested criteria. If the

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Name	Sample No.	QC Ref	Sampled	Received	Extraction Due	Extracted	Analysis Due	Analysed
BH13-1	SE275698.013	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH14-1	SE275698.014	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH15-1	SE275698.015	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH16-1	SE275698.016	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024
BH17-1	SE275698.017	LB333099	11 Dec 2024	12 Dec 2024	25 Dec 2024	12 Dec 2024	25 Dec 2024	16 Dec 2024

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

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

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Tetrachloro-m-xylene (TCMX) (Surrogate)	BH2-1	SE275698.002	%	60 - 130%	89
	BH5-1	SE275698.005	%	60 - 130%	89
	BH10-1	SE275698.010	%	60 - 130%	96
	BH12-1	SE275698.012	%	60 - 130%	105
	BH14-1	SE275698.014	%	60 - 130%	98
	BH16-1	SE275698.016	%	60 - 130%	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2-fluorobiphenyl (Surrogate)	BH1-1	SE275698.001	%	70 - 130%	102
	BH2-1	SE275698.002	%	70 - 130%	97
	BH3-1	SE275698.003	%	70 - 130%	99
	BH4-1	SE275698.004	%	70 - 130%	96
	BH5-1	SE275698.005	%	70 - 130%	98
	BH6-1	SE275698.006	%	70 - 130%	36 †
	BH7-1	SE275698.007	%	70 - 130%	96
	BH8-1	SE275698.008	%	70 - 130%	99
	BH9-1	SE275698.009	%	70 - 130%	94
	BH10-1	SE275698.010	%	70 - 130%	91
	BH11-1	SE275698.011	%	70 - 130%	81
	BH12-1	SE275698.012	%	70 - 130%	98
	BH13-1	SE275698.013	%	70 - 130%	97
	BH14-1	SE275698.014	%	70 - 130%	88
	BH15-1	SE275698.015	%	70 - 130%	94
	BH16-1	SE275698.016	%	70 - 130%	93
	BH17-1	SE275698.017	%	70 - 130%	100
d14-p-terphenyl (Surrogate)	BH1-1	SE275698.001	%	70 - 130%	104
	BH2-1	SE275698.002	%	70 - 130%	101
	BH3-1	SE275698.003	%	70 - 130%	101
	BH4-1	SE275698.004	%	70 - 130%	100
	BH5-1	SE275698.005	%	70 - 130%	101
	BH6-1	SE275698.006	%	70 - 130%	55 †
	BH7-1	SE275698.007	%	70 - 130%	99
	BH8-1	SE275698.008	%	70 - 130%	104
	BH9-1	SE275698.009	%	70 - 130%	117
	BH10-1	SE275698.010	%	70 - 130%	98
	BH11-1	SE275698.011	%	70 - 130%	92
	BH12-1	SE275698.012	%	70 - 130%	103
	BH13-1	SE275698.013	%	70 - 130%	100
	BH14-1	SE275698.014	%	70 - 130%	96
	BH15-1	SE275698.015	%	70 - 130%	95
	BH16-1	SE275698.016	%	70 - 130%	96
	BH17-1	SE275698.017	%	70 - 130%	100
d5-nitrobenzene (Surrogate)	BH1-1	SE275698.001	%	70 - 130%	89
	BH2-1	SE275698.002	%	70 - 130%	84
	BH3-1	SE275698.003	%	70 - 130%	86
	BH4-1	SE275698.004	%	70 - 130%	85
	BH5-1	SE275698.005	%	70 - 130%	85
	BH6-1	SE275698.006	%	70 - 130%	30 †
	BH7-1	SE275698.007	%	70 - 130%	84
	BH8-1	SE275698.008	%	70 - 130%	88
	BH9-1	SE275698.009	%	70 - 130%	85
	BH10-1	SE275698.010	%	70 - 130%	93
	BH11-1	SE275698.011	%	70 - 130%	80
	BH12-1	SE275698.012	%	70 - 130%	95
	BH13-1	SE275698.013	%	70 - 130%	95
	BH14-1	SE275698.014	%	70 - 130%	84
	BH15-1	SE275698.015	%	70 - 130%	88
	BH16-1	SE275698.016	%	70 - 130%	89
	BH17-1	SE275698.017	%	70 - 130%	92

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

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

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
2,4,6-Tribromophenol (Surrogate)	BH9-1	SE275698.009	%	70 - 130%	242 Ⓢ
d5-phenol (Surrogate)	BH9-1	SE275698.009	%	50 - 130%	104

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	97
	BH2-1	SE275698.002	%	60 - 130%	84
	BH3-1	SE275698.003	%	60 - 130%	79
	BH4-1	SE275698.004	%	60 - 130%	81
	BH5-1	SE275698.005	%	60 - 130%	86
	BH6-1	SE275698.006	%	60 - 130%	80
	BH7-1	SE275698.007	%	60 - 130%	78
	BH81	SE275698.008	%	60 - 130%	78
	BH9-1	SE275698.009	%	60 - 130%	89
	BH10-1	SE275698.010	%	60 - 130%	74
	BH11-1	SE275698.011	%	60 - 130%	79
	BH12-1	SE275698.012	%	60 - 130%	82
	BH13-1	SE275698.013	%	60 - 130%	85
	BH14-1	SE275698.014	%	60 - 130%	90
	BH15-1	SE275698.015	%	60 - 130%	83
	BH16-1	SE275698.016	%	60 - 130%	79
	BH17-1	SE275698.017	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	87
	BH2-1	SE275698.002	%	60 - 130%	104
	BH3-1	SE275698.003	%	60 - 130%	94
	BH4-1	SE275698.004	%	60 - 130%	101
	BH5-1	SE275698.005	%	60 - 130%	94
	BH6-1	SE275698.006	%	60 - 130%	100
	BH7-1	SE275698.007	%	60 - 130%	88
	BH81	SE275698.008	%	60 - 130%	101
	BH9-1	SE275698.009	%	60 - 130%	100
	BH10-1	SE275698.010	%	60 - 130%	89
	BH11-1	SE275698.011	%	60 - 130%	77
	BH12-1	SE275698.012	%	60 - 130%	82
	BH13-1	SE275698.013	%	60 - 130%	88
	BH14-1	SE275698.014	%	60 - 130%	95
	BH15-1	SE275698.015	%	60 - 130%	95
	BH16-1	SE275698.016	%	60 - 130%	101
	BH17-1	SE275698.017	%	60 - 130%	94
d8-toluene (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	90
	BH2-1	SE275698.002	%	60 - 130%	113
	BH3-1	SE275698.003	%	60 - 130%	96
	BH4-1	SE275698.004	%	60 - 130%	103
	BH5-1	SE275698.005	%	60 - 130%	100
	BH6-1	SE275698.006	%	60 - 130%	96
	BH7-1	SE275698.007	%	60 - 130%	94
	BH81	SE275698.008	%	60 - 130%	104
	BH9-1	SE275698.009	%	60 - 130%	103
	BH10-1	SE275698.010	%	60 - 130%	92
	BH11-1	SE275698.011	%	60 - 130%	84
	BH12-1	SE275698.012	%	60 - 130%	86
	BH13-1	SE275698.013	%	60 - 130%	91
	BH14-1	SE275698.014	%	60 - 130%	98
	BH15-1	SE275698.015	%	60 - 130%	96
	BH16-1	SE275698.016	%	60 - 130%	94
	BH17-1	SE275698.017	%	60 - 130%	94

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	97
	BH2-1	SE275698.002	%	60 - 130%	84

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

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

Volatile Petroleum Hydrocarbons in Soil (continued)

Method: ME-(AU)-[ENV]AN433

Parameter	Sample Name	Sample Number	Units	Criteria	Recovery %
Bromofluorobenzene (Surrogate)	BH3-1	SE275698.003	%	60 - 130%	79
	BH4-1	SE275698.004	%	60 - 130%	81
	BH5-1	SE275698.005	%	60 - 130%	86
	BH6-1	SE275698.006	%	60 - 130%	80
	BH7-1	SE275698.007	%	60 - 130%	78
	BH81	SE275698.008	%	60 - 130%	78
	BH9-1	SE275698.009	%	60 - 130%	89
	BH10-1	SE275698.010	%	60 - 130%	74
	BH11-1	SE275698.011	%	60 - 130%	79
	BH12-1	SE275698.012	%	60 - 130%	82
	BH13-1	SE275698.013	%	60 - 130%	85
	BH14-1	SE275698.014	%	60 - 130%	90
	BH15-1	SE275698.015	%	60 - 130%	83
	BH16-1	SE275698.016	%	60 - 130%	79
	BH17-1	SE275698.017	%	60 - 130%	87
d4-1,2-dichloroethane (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	87
	BH2-1	SE275698.002	%	60 - 130%	104
	BH3-1	SE275698.003	%	60 - 130%	94
	BH4-1	SE275698.004	%	60 - 130%	101
	BH5-1	SE275698.005	%	60 - 130%	94
	BH6-1	SE275698.006	%	60 - 130%	100
	BH7-1	SE275698.007	%	60 - 130%	88
	BH81	SE275698.008	%	60 - 130%	101
	BH9-1	SE275698.009	%	60 - 130%	100
	BH10-1	SE275698.010	%	60 - 130%	89
	BH11-1	SE275698.011	%	60 - 130%	77
	BH12-1	SE275698.012	%	60 - 130%	82
	BH13-1	SE275698.013	%	60 - 130%	88
	BH14-1	SE275698.014	%	60 - 130%	95
	BH15-1	SE275698.015	%	60 - 130%	95
	BH16-1	SE275698.016	%	60 - 130%	101
	BH17-1	SE275698.017	%	60 - 130%	94
d8-toluene (Surrogate)	BH1-1	SE275698.001	%	60 - 130%	90
	BH2-1	SE275698.002	%	60 - 130%	113
	BH3-1	SE275698.003	%	60 - 130%	96
	BH4-1	SE275698.004	%	60 - 130%	103
	BH5-1	SE275698.005	%	60 - 130%	100
	BH6-1	SE275698.006	%	60 - 130%	96
	BH7-1	SE275698.007	%	60 - 130%	94
	BH81	SE275698.008	%	60 - 130%	104
	BH9-1	SE275698.009	%	60 - 130%	103
	BH10-1	SE275698.010	%	60 - 130%	92
	BH11-1	SE275698.011	%	60 - 130%	84
	BH12-1	SE275698.012	%	60 - 130%	86
	BH13-1	SE275698.013	%	60 - 130%	91
	BH14-1	SE275698.014	%	60 - 130%	98
	BH15-1	SE275698.015	%	60 - 130%	96
	BH16-1	SE275698.016	%	60 - 130%	94
	BH17-1	SE275698.017	%	60 - 130%	94

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Porth)/AN312

Sample Number	Parameter	Units	LOR	Result
LB333140.001	Mercury	mg/L	0.0001	<0.0001

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result
LB333098.001	Mercury	mg/kg	0.05	<0.05

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB333095.001	Alpha BHC	mg/kg	0.1	<0.1
	Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1
	Beta BHC	mg/kg	0.1	<0.1
	Lindane (gamma BHC)	mg/kg	0.1	<0.1
	Delta BHC	mg/kg	0.1	<0.1
	Heptachlor	mg/kg	0.1	<0.1
	Aldrin	mg/kg	0.1	<0.1
	Heptachlor epoxide	mg/kg	0.1	<0.1
	Gamma Chlordane	mg/kg	0.1	<0.1
	Alpha Chlordane	mg/kg	0.1	<0.1
	Chlordane (alpha + gamma chlordane)	mg/kg	0.1	<0.1
	Alpha Endosulfan	mg/kg	0.1	<0.1
	p,p'-DDE	mg/kg	0.1	<0.1
	Dieldrin	mg/kg	0.1	<0.1
	Endrin	mg/kg	0.1	<0.1
	Beta Endosulfan	mg/kg	0.1	<0.1
	p,p'-DDD	mg/kg	0.1	<0.1
	Endrin aldehyde	mg/kg	0.1	<0.1
	Endosulfan sulphate	mg/kg	0.1	<0.1
	p,p'-DDT	mg/kg	0.1	<0.1
	Endrin ketone	mg/kg	0.1	<0.1
	Methoxychlor	mg/kg	0.1	<0.1
	Mirex	mg/kg	0.1	<0.1
Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	%	-	99

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB333095.001	Naphthalene	mg/kg	0.1	<0.1
	2-methylnaphthalene	mg/kg	0.1	<0.1
	1-methylnaphthalene	mg/kg	0.1	<0.1
	Acenaphthylene	mg/kg	0.1	<0.1
	Acenaphthene	mg/kg	0.1	<0.1
	Fluorene	mg/kg	0.1	<0.1
	Phenanthrene	mg/kg	0.1	<0.1
	Anthracene	mg/kg	0.1	<0.1
	Fluoranthene	mg/kg	0.1	<0.1
	Pyrene	mg/kg	0.1	<0.1
	Benzo(a)anthracene	mg/kg	0.1	<0.1
	Chrysene	mg/kg	0.1	<0.1
	Benzo(a)pyrene	mg/kg	0.1	<0.1
	Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1
	Dibenzo(ah)anthracene	mg/kg	0.1	<0.1
	Benzo(ghi)perylene	mg/kg	0.1	<0.1
	Total PAH (18)	mg/kg	0.8	<0.8
	d5-nitrobenzene (Surrogate)	%	-	96
	2-fluorobiphenyl (Surrogate)	%	-	105
Surrogates	d14-p-terphenyl (Surrogate)	%	-	112

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR
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Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Speciated Phenols in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result
LB333202.001	Phenol	mg/kg	0.5	<0.5
	2-methyl phenol (o-cresol)	mg/kg	0.5	<0.5
	3/4-methyl phenol (m/p-cresol)	mg/kg	1	<1
	2-chlorophenol	mg/kg	0.5	<0.5
	2,4-dimethylphenol	mg/kg	0.5	<0.5
	2,6-dichlorophenol	mg/kg	0.5	<0.5
	2,4-dichlorophenol	mg/kg	0.5	<0.5
	4-chloro-3-methylphenol	mg/kg	2	<2
	2,4,6-trichlorophenol	mg/kg	0.5	<0.5
	2-nitrophenol	mg/kg	0.5	<0.5
	4-nitrophenol	mg/kg	1	<1
	2,4,5-trichlorophenol	mg/kg	0.5	<0.5
	2,3,4,6/2,3,5,6-tetrachlorophenol	mg/kg	1	<1
	Pentachlorophenol	mg/kg	0.5	<0.5
	2,4-dinitrophenol	mg/kg	2	<2
Surrogates	2,4,6-Tribromophenol (Surrogate)	%	-	112
	d5-phenol (Surrogate)	%	-	110

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

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

Sample Number	Parameter	Units	LOR	Result
LB333097.001	Arsenic, As	mg/kg	1	<1
	Cadmium, Cd	mg/kg	0.3	<0.3
	Chromium, Cr	mg/kg	0.5	<0.5
	Copper, Cu	mg/kg	0.5	<0.5
	Nickel, Ni	mg/kg	0.5	<0.5
	Lead, Pb	mg/kg	1	<1
	Zinc, Zn	mg/kg	2	<2.0

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result
LB333325.001	Arsenic	µg/L	1	<1
	Cadmium	µg/L	0.1	<0.1
	Chromium	µg/L	1	<1
	Copper	µg/L	1	<1
	Lead	µg/L	1	<1
	Nickel	µg/L	1	<1
	Zinc	µg/L	5	<5

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result
LB333095.001	TRH C10-C14	mg/kg	20	<20
	TRH C15-C28	mg/kg	45	<45
	TRH C29-C36	mg/kg	45	<45
	TRH C37-C40	mg/kg	100	<100
	TRH C10-C36 Total	mg/kg	110	<110

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number		Parameter	Units	LOR	Result
LB333099.001	Fumigants	2,2-dichloropropane	mg/kg	0.1	<0.1
		1,2-dichloropropane	mg/kg	0.1	<0.1
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1
	Halogenated Aliphatics	Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1
		Chloromethane	mg/kg	1	<1
		Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1
		Bromomethane	mg/kg	1	<1
		Chloroethane	mg/kg	1	<1
		Trichlorofluoromethane	mg/kg	1	<1
		1,1-dichloroethene	mg/kg	0.1	<0.1
		Iodomethane	mg/kg	5	<5
		Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5
		Allyl chloride	mg/kg	0.1	<0.1

Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Sample Number		Parameter	Units	LOR	Result
LB333099.001	Halogenated Aliphatics	trans-1,2-dichloroethene	mg/kg	0.1	<0.1
		1,1-dichloroethane	mg/kg	0.1	<0.1
		cis-1,2-dichloroethene	mg/kg	0.1	<0.1
		Bromochloromethane	mg/kg	0.1	<0.1
		1,2-dichloroethane	mg/kg	0.1	<0.1
		1,1,1-trichloroethane	mg/kg	0.1	<0.1
		1,1-dichloropropene	mg/kg	0.1	<0.1
		Carbon tetrachloride	mg/kg	0.1	<0.1
		Dibromomethane	mg/kg	0.1	<0.1
		Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1
		1,1,2-trichloroethane	mg/kg	0.1	<0.1
		1,3-dichloropropane	mg/kg	0.1	<0.1
		Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1
		1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1
		1,2,3-trichloropropane	mg/kg	0.1	<0.1
		trans-1,4-dichloro-2-butene	mg/kg	1	<1
		1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1
		Hexachlorobutadiene	mg/kg	0.1	<0.1
	Halogenated Aromatics	Chlorobenzene	mg/kg	0.1	<0.1
		Bromobenzene	mg/kg	0.1	<0.1
		2-chlorotoluene	mg/kg	0.1	<0.1
		4-chlorotoluene	mg/kg	0.1	<0.1
		1,3-dichlorobenzene	mg/kg	0.1	<0.1
		1,4-dichlorobenzene	mg/kg	0.1	<0.1
		1,2-dichlorobenzene	mg/kg	0.1	<0.1
		1,2,4-trichlorobenzene	mg/kg	0.1	<0.1
		1,2,3-trichlorobenzene	mg/kg	0.1	<0.1
	Monocyclic Aromatic Hydrocarbons	Benzene	mg/kg	0.1	<0.1
		Toluene	mg/kg	0.1	<0.1
		Ethylbenzene	mg/kg	0.1	<0.1
		m/p-xylene	mg/kg	0.2	<0.2
		Styrene (Vinyl benzene)	mg/kg	0.1	<0.1
		o-xylene	mg/kg	0.1	<0.1
		Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1
		n-propylbenzene	mg/kg	0.1	<0.1
		1,3,5-trimethylbenzene	mg/kg	0.1	<0.1
		tert-butylbenzene	mg/kg	0.1	<0.1
		1,2,4-trimethylbenzene	mg/kg	0.1	<0.1
		sec-butylbenzene	mg/kg	0.1	<0.1
		p-isopropyltoluene	mg/kg	0.1	<0.1
		n-butylbenzene	mg/kg	0.1	<0.1
	Nitrogenous Compounds	Acrylonitrile	mg/kg	0.1	<0.1
		2-nitropropane	mg/kg	10	<10
	Oxygenated Compounds	Acetone (2-propanone)	mg/kg	10	<10
		MtBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1
		Vinyl acetate*	mg/kg	10	<10
		MIBK (4-methyl-2-pentanone)	mg/kg	1	<1
		2-hexanone (MBK)	mg/kg	5	<5
	Polycyclic VOCs	Naphthalene (VOC)*	mg/kg	0.1	<0.1
	Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	-	94
		d8-toluene (Surrogate)	%	-	90
		Bromofluorobenzene (Surrogate)	%	-	73
	Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8
		Total BTEX*	mg/kg	0.6	<0.6
	Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1
		Bromodichloromethane (THM)	mg/kg	0.1	<0.1
		Dibromochloromethane (THM)	mg/kg	0.1	<0.1
		Bromoform (THM)	mg/kg	0.1	<0.1



Blank results are evaluated against the limit of reporting (LOR), for the chosen method and its associated instrumentation, typically 2.5 times the statistically determined method detection limit (MDL).

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

Volatile Petroleum Hydrocarbons in Soil Method: ME-(AU)-ENVJAN433

Sample Number	Parameter	Units	LOR	Result
LB333099.001	TRH C6-C9	mg/kg	20	<20
	Surrogates	d4-1,2-dichloroethane (Surrogate)	%	94

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Perth)/AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275668.001	LB333140.014	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0
SE275719.005	LB333140.023	Mercury	µg/L	0.0001	<0.0001	<0.0001	200	0

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333098.014	Mercury	mg/kg	0.05	<0.05	<0.05	200	0

Moisture Content

Method: ME-(AU)-[ENV]AN002

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333096.011	% Moisture	%w/w	1	13.5	11.3	38	18
SE275736.002	LB333096.022	% Moisture	%w/w	1	2.6	2.6	68	0

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333095.014	Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Chlordane (alpha + gamma chlordane)	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin	mg/kg	0.1	<0.1	<0.1	200	0
		Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total OC Pesticides	mg/kg	0.1	<0.1	<0.1	200	0
SE275736.002	LB333095.024	Total OC VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	200	0
		Total Other OCP VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates						
		Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.48	0.47	30	1
		Alpha BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Hexachlorobenzene (HCB)	mg/kg	0.1	<0.1	<0.1	200	0
		Beta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Lindane (gamma BHC)	mg/kg	0.1	<0.1	<0.1	200	0
		Delta BHC	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor	mg/kg	0.1	<0.1	<0.1	200	0
		Aldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Heptachlor epoxide	mg/kg	0.1	<0.1	<0.1	200	0
		Gamma Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Chlordane	mg/kg	0.1	<0.1	<0.1	200	0
		Chlordane (alpha + gamma chlordane)	mg/kg	0.1	<0.1	<0.1	200	0
		Alpha Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDE	mg/kg	0.1	<0.1	<0.1	200	0
		Dieldrin	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin	mg/kg	0.1	<0.1	<0.1	200	0
		Beta Endosulfan	mg/kg	0.1	<0.1	<0.1	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

OC Pesticides in Soil (continued)

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275736.002	LB333095.024	p,p'-DDD	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin aldehyde	mg/kg	0.1	<0.1	<0.1	200	0
		Endosulfan sulphate	mg/kg	0.1	<0.1	<0.1	200	0
		p,p'-DDT	mg/kg	0.1	<0.1	<0.1	200	0
		Endrin ketone	mg/kg	0.1	<0.1	<0.1	200	0
		Methoxychlor	mg/kg	0.1	<0.1	<0.1	200	0
		Mirex	mg/kg	0.1	<0.1	<0.1	200	0
		Total OC Pesticides	mg/kg	0.1	<0.1	<0.1	200	0
		Total OC VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	200	0
		Total Other OCP VIC EPA IWRG621	mg/kg	0.1	<0.1	<0.1	200	0
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.50	0.50	30	1

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-ENVJAN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333095.014	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	<0.1	200	0
		Phenanthrene	mg/kg	0.1	<0.1	<0.1	200	0
		Anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Chrysene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(a)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	200	0
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	200	0
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	<0.2	<0.2	200	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	<0.2	<0.2	175	0
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	<0.3	<0.3	134	0
		Total PAH (18)	mg/kg	0.8	<0.8	<0.8	200	0
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	1
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.4	30	3
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	2
SE275736.002	LB333095.024	Naphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	200	0
		Acenaphthylene	mg/kg	0.1	0.7	1.0	42	32
		Acenaphthene	mg/kg	0.1	<0.1	<0.1	200	0
		Fluorene	mg/kg	0.1	<0.1	0.1	170	4
		Phenanthrene	mg/kg	0.1	0.4	1.6	40	120 @
		Anthracene	mg/kg	0.1	0.2	0.5	59	71 @
		Fluoranthene	mg/kg	0.1	1.3	3.5	34	88 @
		Pyrene	mg/kg	0.1	2.1	4.6	33	74 @
		Benzo(a)anthracene	mg/kg	0.1	1.0	2.1	36	70 @
		Chrysene	mg/kg	0.1	1.2	2.3	36	61 @
		Benzo(b&j)fluoranthene	mg/kg	0.1	1.9	2.7	34	35 @
		Benzo(k)fluoranthene	mg/kg	0.1	1.6	2.3	35	37 @
		Benzo(a)pyrene	mg/kg	0.1	2.0	2.8	34	36 @
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	1.3	1.6	37	22
		Dibenzo(ah)anthracene	mg/kg	0.1	0.3	0.4	62	36
		Benzo(ghi)perylene	mg/kg	0.1	1.1	1.5	38	32
		Carcinogenic PAHs, BaP TEQ <LOR=0*	mg/kg	0.2	2.8	4.1	16	37 @
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	mg/kg	0.2	2.8	4.1	16	37 @
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	mg/kg	0.3	2.8	4.1	19	37 @
		Total PAH (18)	mg/kg	0.8	15	27	30	56 @

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

PAH (Polynuclear Aromatic Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN420

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275736.002	LB333095.024	Surrogates						
		d5-nitrobenzene (Surrogate)	mg/kg	-	0.5	0.5	30	0
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0
		d14-p-terphenyl (Surrogate)	mg/kg	-	0.5	0.5	30	0

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

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

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333097.014	Arsenic, As	mg/kg	1	<1	<1	170	0
		Cadmium, Cd	mg/kg	0.3	<0.3	<0.3	154	0
		Chromium, Cr	mg/kg	0.5	3.8	3.7	43	3
		Copper, Cu	mg/kg	0.5	6.1	5.9	38	3
		Nickel, Ni	mg/kg	0.5	0.9	0.9	83	1
		Lead, Pb	mg/kg	1	98	97	31	1
		Zinc, Zn	mg/kg	2	450	440	30	2

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275839.010	LB333325.014	Arsenic	µg/L	1	<1	<1	200	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	200	0
		Copper	µg/L	1	<1	<1	200	0
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	200	0
		Zinc	µg/L	5	<5	<5	200	0
SE275839.011	LB333325.016	Arsenic	µg/L	1	<1	<1	143	0
		Cadmium	µg/L	0.1	<0.1	<0.1	200	0
		Chromium	µg/L	1	<1	<1	169	0
		Copper	µg/L	1	2	2	69	2
		Lead	µg/L	1	<1	<1	200	0
		Nickel	µg/L	1	<1	<1	158	0
		Zinc	µg/L	5	18	18	43	4

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.010	LB333095.014	TRH C10-C14	mg/kg	20	<20	<20	200	0
		TRH C15-C28	mg/kg	45	<45	<45	200	0
		TRH C29-C36	mg/kg	45	<45	<45	200	0
		TRH C37-C40	mg/kg	100	<100	<100	200	0
		TRH C10-C36 Total	mg/kg	110	<110	<110	200	0
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	200	0
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	200	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	200	0
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	200	0
SE275736.002	LB333095.024	TRH C10-C14	mg/kg	20	<20	<20	164	0
		TRH C15-C28	mg/kg	45	460	510	39	9
		TRH C29-C36	mg/kg	45	160	170	57	8
		TRH C37-C40	mg/kg	100	<100	<100	150	0
		TRH C10-C36 Total	mg/kg	110	620	680	47	8
		TRH >C10-C40 Total (F bands)	mg/kg	210	700	760	59	8
		TRH F Bands						
		TRH >C10-C16	mg/kg	25	<25	<25	144	0
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	<25	<25	200	0
		TRH >C16-C34 (F3)	mg/kg	90	560	610	45	8
		TRH >C34-C40 (F4)	mg/kg	120	140	150	115	8

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Original	Duplicate	Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.009	LB333099.028	Fumigants						
		2,2-dichloropropane	mg/kg	0.1	<0.1	0.0029358021	200	0
		1,2-dichloropropane	mg/kg	0.1	<0.1	0.0001672572	200	0
		cis-1,3-dichloropropene	mg/kg	0.1	<0.1	0.0005791074	200	0
		trans-1,3-dichloropropene	mg/kg	0.1	<0.1	0.0006155162	200	0
		1,2-dibromoethane (EDB)	mg/kg	0.1	<0.1	0	200	0
		Halogenated						
		Dichlorodifluoromethane (CFC-12)	mg/kg	1	<1	0.0005721704	200	0
		Aliphatics						
		Chloromethane	mg/kg	1	<1	0	200	0

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.009	LB333099.028	Halogenated	Vinyl chloride (Chloroethene)	mg/kg	0.1	<0.1	0.0003662854	200	0
			Bromomethane	mg/kg	1	<1	0	200	0
		Aliphatics	Chloroethane	mg/kg	1	<1	0.0374299042	200	0
			Trichlorofluoromethane	mg/kg	1	<1	0.0002694379	200	0
			1,1-dichloroethene	mg/kg	0.1	<0.1	0.0008073643	200	0
			Iodomethane	mg/kg	5	<5	0.0639929189	200	0
			Dichloromethane (Methylene chloride)	mg/kg	0.5	<0.5	0.0156364907	200	0
			Allyl chloride	mg/kg	0.1	<0.1	0.0058543284	200	0
			trans-1,2-dichloroethene	mg/kg	0.1	<0.1	0	200	0
			1,1-dichloroethane	mg/kg	0.1	<0.1	0.0001123959	200	0
			cis-1,2-dichloroethene	mg/kg	0.1	<0.1	0.0002311756	200	0
			Bromochloromethane	mg/kg	0.1	<0.1	0.0003450464	200	0
			1,2-dichloroethane	mg/kg	0.1	<0.1	0.0020021904	200	0
			1,1,1-trichloroethane	mg/kg	0.1	<0.1	6.4481014402	200	0
			1,1-dichloropropene	mg/kg	0.1	<0.1	0.0001225560	200	0
			Carbon tetrachloride	mg/kg	0.1	<0.1	0.0002618344	200	0
			Dibromomethane	mg/kg	0.1	<0.1	0.0004604352	200	0
			Trichloroethene (Trichloroethylene,TCE)	mg/kg	0.1	<0.1	0	200	0
			1,1,2-trichloroethane	mg/kg	0.1	<0.1	0	200	0
			1,3-dichloropropane	mg/kg	0.1	<0.1	0	200	0
			Tetrachloroethene (Perchloroethylene,PCE)	mg/kg	0.1	<0.1	0	200	0
			1,1,1,2-tetrachloroethane	mg/kg	0.1	<0.1	0	200	0
			1,1,2,2-tetrachloroethane	mg/kg	0.1	<0.1	0.0004758621	200	0
			1,2,3-trichloropropane	mg/kg	0.1	<0.1	0	200	0
			trans-1,4-dichloro-2-butene	mg/kg	1	<1	0	200	0
			1,2-dibromo-3-chloropropane	mg/kg	0.1	<0.1	0	200	0
			Hexachlorobutadiene	mg/kg	0.1	<0.1	0.0001232039	200	0
		Halogenated	Chlorobenzene	mg/kg	0.1	<0.1	0.0011105791	200	0
			Bromobenzene	mg/kg	0.1	<0.1	0.0014299881	200	0
		Aromatics	2-chlorotoluene	mg/kg	0.1	<0.1	0.0010355301	200	0
			4-chlorotoluene	mg/kg	0.1	<0.1	0.0001222320	200	0
			1,3-dichlorobenzene	mg/kg	0.1	<0.1	0.0003942524	200	0
			1,4-dichlorobenzene	mg/kg	0.1	<0.1	0.0001493791	200	0
			1,2-dichlorobenzene	mg/kg	0.1	<0.1	0.0004126879	200	0
			1,2,4-trichlorobenzene	mg/kg	0.1	<0.1	3.9734514510	200	0
			1,2,3-trichlorobenzene	mg/kg	0.1	<0.1	0.0001377838	200	0
		Monocyclic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			Styrene (Vinyl benzene)	mg/kg	0.1	<0.1	0.0001585781	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
			Isopropylbenzene (Cumene)	mg/kg	0.1	<0.1	0	200	0
			n-propylbenzene	mg/kg	0.1	<0.1	0.0010352877	200	0
			1,3,5-trimethylbenzene	mg/kg	0.1	<0.1	0.0022845466	200	0
			tert-butylbenzene	mg/kg	0.1	<0.1	0.0057079839	200	0
			1,2,4-trimethylbenzene	mg/kg	0.1	<0.1	0.0062944684	200	0
			sec-butylbenzene	mg/kg	0.1	<0.1	0.0051884188	200	0
			p-isopropyltoluene	mg/kg	0.1	<0.1	0.0050400854	200	0
			n-butylbenzene	mg/kg	0.1	<0.1	0.0015664676	200	0
		Nitrogenous	Acrylonitrile	mg/kg	0.1	<0.1	0.0017687385	200	0
			2-nitropropane	mg/kg	10	<10	0	200	0
		Oxygenated	Acetone (2-propanone)	mg/kg	10	<10	0	200	0
			MTBE (Methyl-tert-butyl ether)	mg/kg	0.1	<0.1	0.0040867928	200	0
		Compounds	Vinyl acetate*	mg/kg	10	<10	0.0270262235	200	0
			MIBK (4-methyl-2-pentanone)	mg/kg	1	<1	0.0028409187	200	0
			2-hexanone (MBK)	mg/kg	5	<5	0	200	0
			Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Sulphonated	Carbon disulfide	mg/kg	0.5	<0.5	0.0015880872	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	8.9	50	11
			d8-toluene (Surrogate)	mg/kg	-	10.3	9.2	50	11

Duplicates are calculated as Relative Percentage Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

NOTE: The RPD reported is calculated from the unrounded data for the original and replicate result. Manual calculation of the RPD from the rounded data reported may

VOC's in Soil (continued)

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.009	LB333099.028	Surrogates	Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.3	50	20
		Totals	Total Other Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	0.0211917794	200	0
			Total Chlorinated Hydrocarbons VIC EPA*	mg/kg	1.8	<1.8	0.0216812688	200	0
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
			Total Volatile Chlorinated Hydrocarbons*	mg/kg	3	<3.0	0.0453273438	200	0
			Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0
		Trihalomethanes	Chloroform (THM)	mg/kg	0.1	<0.1	0	200	0
			Bromodichloromethane (THM)	mg/kg	0.1	<0.1	0.0004883512	200	0
			Dibromochloromethane (THM)	mg/kg	0.1	<0.1	0	200	0
			Bromoform (THM)	mg/kg	0.1	<0.1	0.0025906073	200	0
SE275736.002	LB333099.024	Monocyclic Aromatic	Benzene	mg/kg	0.1	<0.1	<0.1	200	0
			Toluene	mg/kg	0.1	<0.1	<0.1	200	0
			Ethylbenzene	mg/kg	0.1	<0.1	<0.1	200	0
			m/p-xylene	mg/kg	0.2	<0.2	<0.2	200	0
			o-xylene	mg/kg	0.1	<0.1	<0.1	200	0
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	<0.1	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.4	7.6	50	2
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.7	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	7.0	50	7
			Total BTEX*	mg/kg	0.6	<0.6	<0.6	200	0
		Totals	Total Xylenes*	mg/kg	0.3	<0.3	<0.3	200	0

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-ENVJAN433

Original	Duplicate		Parameter	Units	LOR	Original	Duplicate	Criteria %	RPD %
SE275698.009	LB333099.026		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	10.0	8.9	50	11
			d8-toluene (Surrogate)	mg/kg	-	10.3	9.2	50	11
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.9	7.3	50	20
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0
SE275736.002	LB333099.024		TRH C6-C10	mg/kg	25	<25	<25	200	0
			TRH C6-C9	mg/kg	20	<20	<20	200	0
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	7.4	7.6	50	2
			d8-toluene (Surrogate)	mg/kg	-	7.7	7.7	50	0
			Bromofluorobenzene (Surrogate)	mg/kg	-	7.5	7.0	50	7
		VPH F Bands	Benzene (F0)	mg/kg	0.1	<0.1	<0.1	200	0
			TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	<25	200	0

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

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

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333098.002	Mercury	mg/kg	0.05	0.18	0.2	80 - 120	92

OC Pesticides in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333095.002	Delta BHC	mg/kg	0.1	0.2	0.2	60 - 140	102
	Heptachlor	mg/kg	0.1	0.2	0.2	60 - 140	109
	Aldrin	mg/kg	0.1	0.2	0.2	60 - 140	101
	Dieldrin	mg/kg	0.1	0.2	0.2	60 - 140	98
	Endrin	mg/kg	0.1	0.2	0.2	60 - 140	86
	p,p'-DDT	mg/kg	0.1	0.2	0.2	60 - 140	89
	Surrogates	Tetrachloro-m-xylene (TCMX) (Surrogate)	mg/kg	-	0.49	0.5	40 - 130

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB333095.002	Naphthalene	mg/kg	0.1	3.7	4	60 - 140	93	
	Acenaphthylene	mg/kg	0.1	3.8	4	60 - 140	95	
	Acenaphthene	mg/kg	0.1	3.6	4	60 - 140	91	
	Phenanthrene	mg/kg	0.1	4.2	4	60 - 140	104	
	Anthracene	mg/kg	0.1	4.0	4	60 - 140	101	
	Fluoranthene	mg/kg	0.1	3.7	4	60 - 140	92	
	Pyrene	mg/kg	0.1	4.4	4	60 - 140	110	
	Benzo(a)pyrene	mg/kg	0.1	4.1	4	60 - 140	102	
	Surrogates	d5-nitrobenzene (Surrogate)	mg/kg	-	0.4	0.5	70 - 130	89
		2-fluorobiphenyl (Surrogate)	mg/kg	-	0.4	0.5	70 - 130	88
d14-p-terphenyl (Surrogate)		ma/ka	-	0.5	0.5	70 - 130	108	

Speciated Phenols in Soil

Method: ME-(AU)-[ENV]AN420

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333202.002	Phenol	mg/kg	0.5	1.0	1	70 - 130	102
	2,4-dichlorophenol	mg/kg	0.5	1.2	1	70 - 130	124
	2,4,6-trichlorophenol	mg/kg	0.5	1.2	1	70 - 130	120
	Pentachlorophenol	mg/kg	0.5	0.8	1	70 - 130	76
	Surrogates	2,4,6-Tribromophenol (Surrogate)	mg/kg	-	6.3	5	40 - 130
	d5-phenol (Surrogate)	mg/kg	-	2.0	2	40 - 130	100

Total Recoverable Elements in Soil/Waste Solids/Materials by ICPOES

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

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333097.002	Arsenic, As	mg/kg	1	340	318.22	80 - 120	106
	Cadmium, Cd	mg/kg	0.3	4.2	4.81	70 - 130	87
	Chromium, Cr	mg/kg	0.5	39	38.31	80 - 120	102
	Copper, Cu	mg/kg	0.5	300	290	80 - 120	104
	Nickel, Ni	mg/kg	0.5	180	187	80 - 120	99
	Lead, Pb	mg/kg	1	89	89.9	80 - 120	99
	Zinc, Zn	mg/kg	2	270	273	80 - 120	100

Trace Metals (Dissolved) in Water by ICPMS

Method: ME-(AU)-[ENV]AN318

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333325.002	Arsenic	µg/L	1	19	20	80 - 120	96
	Cadmium	µg/L	0.1	21	20	80 - 120	106
	Chromium	µg/L	1	21	20	80 - 120	107
	Copper	µg/L	1	23	20	80 - 120	114
	Lead	µg/L	1	21	20	80 - 120	104
	Nickel	µg/L	1	21	20	80 - 120	107
	Zinc	µg/L	5	23	20	80 - 120	113

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB333095.002	TRH C10-C14	mg/kg	20	43	40	60 - 140	108	
	TRH C15-C28	mg/kg	45	<45	40	60 - 140	85	
	TRH C29-C36	mg/kg	45	<45	40	60 - 140	82	
	TRH F Bands	TRH >C10-C16	mg/kg	25	40	40	60 - 140	100
		TRH >C16-C34 (F3)	mg/kg	90	<90	40	60 - 140	80

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

Sample Number		Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333095.002	TRH F Bands	TRH >C34-C40 (F4)	mg/kg	120	<120	20	60 - 140	84

VOC's in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %	
LB333099.002	Halogenated	1,1-dichloroethene	mg/kg	0.1	4.5	5	60 - 140	90
	Aliphatics	1,2-dichloroethane	mg/kg	0.1	5.7	5	60 - 140	115
		Trichloroethene (Trichloroethylene,TCE)		mg/kg	0.1	6.3	5	60 - 140
	Halogenated	Chlorobenzene	mg/kg	0.1	5.6	5	60 - 140	113
	Monocyclic	Benzene	mg/kg	0.1	5.0	5	60 - 140	100
	Aromatic	Toluene	mg/kg	0.1	5.5	5	60 - 140	109
		Ethylbenzene	mg/kg	0.1	5.1	5	60 - 140	102
		m/p-xylene	mg/kg	0.2	9.8	10	60 - 140	98
		o-xylene	mg/kg	0.1	5.4	5	60 - 140	108
	Trihalomethan	Chloroform (THM)	ma/ka	0.1	6.0	5	60 - 140	121

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN433

Sample Number	Parameter	Units	LOR	Result	Expected	Criteria %	Recovery %
LB333099.002	TRH C6-C10	mg/kg	25	69	92.5	60 - 140	75
	TRH C6-C9	mg/kg	20	62	80	60 - 140	77
	VPH F Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	38	62.5	60 - 140

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

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

Mercury (dissolved) in Water

Method: ME-(AU)-[ENV]AN311(Porth)/AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275631.001	LB333140.004	Mercury	mg/L	0.0001	0.0020	<0.0001	0.008	105

Mercury in Soil

Method: ME-(AU)-[ENV]AN312

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333098.004	Mercury	mg/kg	0.05	0.17	<0.05	0.2	85

PAH (Polynuclear Aromatic Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN420

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333095.004	Naphthalene	mg/kg	0.1	3.5	<0.1	4	89
		2-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		1-methylnaphthalene	mg/kg	0.1	<0.1	<0.1	-	-
		Acenaphthylene	mg/kg	0.1	3.3	<0.1	4	81
		Acenaphthene	mg/kg	0.1	3.5	<0.1	4	88
		Fluorene	mg/kg	0.1	<0.1	<0.1	-	-
		Phenanthrene	mg/kg	0.1	4.1	<0.1	4	102
		Anthracene	mg/kg	0.1	3.8	<0.1	4	94
		Fluoranthene	mg/kg	0.1	3.9	<0.1	4	99
		Pyrene	mg/kg	0.1	4.5	<0.1	4	113
		Benzo(a)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Chrysene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(b&j)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(k)fluoranthene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(a)pyrene	mg/kg	0.1	3.7	<0.1	4	93
		Indeno(1,2,3-cd)pyrene	mg/kg	0.1	<0.1	<0.1	-	-
		Dibenzo(ah)anthracene	mg/kg	0.1	<0.1	<0.1	-	-
		Benzo(ghi)perylene	mg/kg	0.1	<0.1	<0.1	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=0*	TEQ (mg/kg)	0.2	3.7	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR/2*	TEQ (mg/kg)	0.2	3.8	<0.2	-	-
		Carcinogenic PAHs, BaP TEQ <LOR=LOR*	TEQ (mg/kg)	0.3	3.9	<0.3	-	-
		Surrogates	Total PAH (18)	mg/kg	0.8	30	<0.8	-
d5-nitrobenzene (Surrogate)	mg/kg		-	0.4	0.4	-	90	
2-fluorobiphenyl (Surrogate)	mg/kg		-	0.5	0.5	-	96	
d14-p-terphenyl (Surrogate)	mg/kg		-	0.5	0.5	-	105	

Total Recoverable Elements in Soil/Waste Solids/Materials by ICP-OES

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

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333097.004	Arsenic, As	mg/kg	1	48	1	50	95
		Cadmium, Cd	mg/kg	0.3	45	<0.3	50	90
		Chromium, Cr	mg/kg	0.5	45	<0.5	50	90
		Copper, Cu	mg/kg	0.5	47	<0.5	50	94
		Nickel, Ni	mg/kg	0.5	47	<0.5	50	93
		Lead, Pb	mg/kg	1	48	<1	50	95
		Zinc, Zn	mg/kg	2	47	<2.0	50	94

Trace Metals (Dissolved) in Water by ICP-MS

Method: ME-(AU)-[ENV]AN318

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.019	LB333325.004	Arsenic	µg/L	1	21	<1	20	103
		Cadmium	µg/L	0.1	22	<0.1	20	111
		Chromium	µg/L	1	22	<1	20	110
		Copper	µg/L	1	39	17	20	108
		Lead	µg/L	1	22	<1	20	109
		Nickel	µg/L	1	21	<1	20	105
		Zinc	µg/L	5	39	18	20	108

TRH (Total Recoverable Hydrocarbons) in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR
-----------	---------------	-----------	-------	-----

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

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

TRH (Total Recoverable Hydrocarbons) in Soil (continued)

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333095.004	TRH C10-C14	mg/kg	20	42	<20	40	103
		TRH C15-C28	mg/kg	45	<45	<45	40	83
		TRH C29-C36	mg/kg	45	<45	<45	40	89
		TRH C37-C40	mg/kg	100	<100	<100	-	-
		TRH C10-C36 Total	mg/kg	110	<110	<110	-	-
		TRH >C10-C40 Total (F bands)	mg/kg	210	<210	<210	-	-
		TRH F	mg/kg	25	39	<25	40	94
		TRH >C10-C16 - Naphthalene (F2)	mg/kg	25	39	<25	-	-
		TRH >C16-C34 (F3)	mg/kg	90	<90	<90	40	85
		TRH >C34-C40 (F4)	mg/kg	120	<120	<120	-	-

VOC's in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333099.004	Monocyclic	Benzene	mg/kg	0.1	<0.1	5	88
		Aromatic	Toluene	mg/kg	0.1	<0.1	5	95
			Ethylbenzene	mg/kg	0.1	<0.1	5	95
			m/p-xylene	mg/kg	0.2	<0.2	10	92
			o-xylene	mg/kg	0.1	<0.1	5	98
		Polycyclic	Naphthalene (VOC)*	mg/kg	0.1	<0.1	-	-
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	8.7	80
			d8-toluene (Surrogate)	mg/kg	-	8.3	9.0	83
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	9.7	86
		Totals	Total BTEX*	mg/kg	0.6	<0.6	-	-
			Total Xylenes*	mg/kg	0.3	<0.3	-	-

Volatile Petroleum Hydrocarbons in Soil

Method: ME-(AU)-[ENV]AN403

QC Sample	Sample Number	Parameter	Units	LOR	Result	Original	Spike	Recovery%
SE275698.001	LB333099.004	TRH C6-C10	mg/kg	25	86	<25	92.5	92
		TRH C6-C9	mg/kg	20	76	<20	80	94
		Surrogates	d4-1,2-dichloroethane (Surrogate)	mg/kg	-	8.0	8.7	80
			d8-toluene (Surrogate)	mg/kg	-	8.3	9.0	83
			Bromofluorobenzene (Surrogate)	mg/kg	-	8.6	9.7	86
		VPH F	Benzene (F0)	mg/kg	0.1	<0.1	-	-
		Bands	TRH C6-C10 minus BTEX (F1)	mg/kg	25	<25	62.5	92

Matrix spike duplicates are calculated as Relative Percent Difference (RPD) using the formula: $RPD = | \text{OriginalResult} - \text{ReplicateResult} | \times 100 / \text{Mean}$

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

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

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

RPD is shown in **Green** when within suggested criteria or **Red** with an appended reason identifier when outside suggested criteria. Refer to the footnotes section at the

No matrix spike duplicates were required for this job.

Samples analysed as received.

Solid samples expressed on a dry weight basis.

QC criteria are subject to internal review according to the SGS QA/QC plan and may be provided on request or alternatively can be found here : https://www.sgs.com.au/~media/Local/Australia/Documents/Technical Documents/MP-AU-ENV-QU-022_QA_QC_Plan.pdf

- * NATA accreditation does not cover the performance of this service.
- ** Indicative data, theoretical holding time exceeded.
- *** Indicates that both * and ** apply.
- Sample not analysed for this analyte.
- IS Insufficient sample for analysis.
- LNR Sample listed, but not received.
- LOR Limit of reporting.
- QFH QC result is above the upper tolerance.
- QFL QC result is below the lower tolerance.
- ① At least 2 of 3 surrogates are within acceptance criteria.
- ② RPD failed acceptance criteria due to sample heterogeneity.
- ③ Results less than 5 times LOR preclude acceptance criteria for RPD.
- ④ Recovery failed acceptance criteria due to matrix interference.
- ⑤ Recovery failed acceptance criteria due to the presence of significant concentration of analyte (i.e. the concentration of analyte exceeds the spike level).
- ⑥ LOR was raised due to sample matrix interference.
- ⑦ LOR was raised due to dilution of significantly high concentration of analyte in sample.
- ⑧ Reanalysis of sample in duplicate confirmed sample heterogeneity and inconsistency of results.
- ⑨ Recovery failed acceptance criteria due to sample heterogeneity.
- ⑩ LOR was raised due to high conductivity of the sample (required dilution).
- † Refer to relevant report comments for further information.

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ANALYTICAL REPORT



Accreditation No. 2562

CLIENT DETAILS

Contact **James McMahon**
Client **JM ENVIRONMENTS**
Address **37 TOOKE STREET
COOKS HILL NSW 2300**

Telephone **0427 893 668**
Facsimile **(Not specified)**
Email **james@jmenvironments.com**

Project **JME24089**
Order Number **JME24089**
Samples **4**

LABORATORY DETAILS

Manager **Shane McDermott**
Laboratory **SGS Alexandria Environmental**
Address **Unit 16, 33 Maddox St
Alexandria NSW 2015**

Telephone **+61 2 8594 0400**
Facsimile **+61 2 8594 0499**
Email **au.environmental.sydney@sgs.com**

SGS Reference **SE275698 R0**
Date Received **12 Dec 2024**
Date Reported **18 Dec 2024**

COMMENTS

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

No respirable fibres detected in all soil samples using trace analysis technique.
Asbestos analysed by Approved Identifier Ravee Sivasubramaniam

SIGNATORIES

Ravee SIVASUBRAMANIAM
Hygiene Team Leader

RESULTS

Fibre Identification in soil

Method AN602

Laboratory Reference	Client Reference	Matrix	Sample Description	Date Sampled	Date Analysed	Fibre Identification	Est.%w/w*
SE275698.010	BH10-1	Soil	563g Sand, Soil, Rocks, Plant Matter	11 Dec 2024	16 Dec 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE275698.012	BH12-1	Soil	634g Sand, Soil, Rocks, Plant Matter	11 Dec 2024	16 Dec 2024	No Asbestos Found at RL of 0.1g/kg Organic Fibres Detected	<0.01
SE275698.014	BH14-1	Soil	578g Clay, Sand, Soil, Rocks	11 Dec 2024	16 Dec 2024	No Asbestos Found at RL of 0.1g/kg	<0.01
SE275698.016	BH16-1	Soil	519g Sand, Soil, Rocks, Plant Matter	11 Dec 2024	16 Dec 2024	No Asbestos Found at RL of 0.1g/kg	<0.01

Gravimetric Determination of Asbestos in Soil [AN605] Tested: 13/12/2024

PARAMETER	UOM	LOR	BH10-1	BH12-1	BH14-1	BH16-1
			SOIL	SOIL	SOIL	SOIL
			11/12/2024 SE275698.010	11/12/2024 SE275698.012	11/12/2024 SE275698.014	11/12/2024 SE275698.016
Date Analysed*	No unit	-	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00	16/12/2024 00:00
Total Sample Weight*	g	1	563	634	578	519
Bonded ACM in >7mm Sample*	g	0.001	<0.001	<0.001	<0.001	<0.001
AF/FA in >2mm to <7mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
AF/FA in <2mm Sample*	g	0.00001	<0.00001	<0.00001	<0.00001	<0.00001
Asbestos in soil (>7mm ACM)*	%w/w	0.01	<0.01	<0.01	<0.01	<0.01
Asbestos in soil (>2mm to <7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<2mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Asbestos in soil (<7mm AF/FA)*	%w/w	0.001	<0.001	<0.001	<0.001	<0.001
Fibre Type*	No unit	-	NAD	NAD	NAD	NAD

METHOD

METHODOLOGY SUMMARY

AN602/AS4964	Qualitative identification of chrysotile, amosite and crocidolite in bulk samples by polarised light microscopy (PLM) in conjunction with dispersion staining (DS). AS4964 provides the basis for this document. Unequivocal identification of the asbestos minerals present is made by obtaining sufficient diagnostic 'clues', which provide a reasonable degree of certainty, dispersion staining is a mandatory 'clue' for positive identification. If sufficient 'clues' are absent, then positive identification of asbestos is not possible. This procedure requires removal of suspect fibres/bundles from the sample which cannot be returned.
AN602/AS4964	Fibres/material that cannot be unequivocally identified as one of the three asbestos forms, will be reported as unknown mineral fibres (umf) The fibres detected may or may not be asbestos fibres.
AN602/AS4964	AS4964.2004 Method for the Qualitative Identification of Asbestos in Bulk Samples, Section 8.4, Trace Analysis Criteria, Note 4 states: "Depending upon sample condition and fibre type, the detection/reporting limit (RL) of this technique has been found to lie generally in the range of 1 in 1,000 to 1 in 10,000 parts by weight, equivalent to 1 to 0.1 g/kg."
AN602/AS4964	The sample can be reported "no asbestos found at the reporting limit (RL) of 0.1 g/kg" (<0.01%w/w) where AN602 section 4.5 of this method has been followed, and if- (a) no trace asbestos fibres have been detected (i.e. no 'respirable' fibres); (b) the estimated weight of non-respirable asbestos fibre bundles and/or the estimated weight of asbestos in asbestos-containing materials are found to be less than 0.1g/kg; and (c) these non-respirable asbestos fibre bundles and/or the asbestos containing materials are only visible under stereo-microscope viewing conditions.
AN605	This technique gravimetrically determines the mass of Bonded Asbestos Containing Material retained on a 7mm Sieve and assumes that 15% of this ACM is asbestos. This calculated asbestos weight is then calculated as a percentage of the total sample weight. Any fibrous asbestos (FA) found in this fraction will be added to the 2-7mm fraction and its mass recorded there.
AN605	This technique also gravimetrically determines the mass of Fibrous Asbestos (FA) and Asbestos Fines (AF) Containing Material retained on and passing a 2mm sieve post 7mm sieving. Assumes that FA and AF are 100% asbestos containing. This calculated asbestos weight is then calculated as a percentage of the total sample weight. This does not include free/respirable fibres which are only observed by standard trace analysis as per AN602.
AN605	Bonded asbestos containing material (Bonded ACM) comprises asbestos-containing-material which is sound in condition. Fibrous asbestos (FA) comprises friable asbestos material and includes severely weathered cement sheet, insulation products and woven asbestos material. Asbestos fines (AF) includes free fibres, small fibre bundles and also small fragments of bonded ACM that passes through a 7mm sieve - which implies that the bonded ACM fragments have a substantial degree of damage which increases the potential for fibre release.
AN-605	Insofar as is technically feasible, this report is consistent with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment Remediation and Management of Asbestos - Contaminated Sites in Western Australia - May 2009 and NEPM 1999 (2013) schedule B1 section 4..

FOOTNOTES

Amosite	-	Brown Asbestos	NA	-	Not Analysed
Chrysotile	-	White Asbestos	LNR	-	Listed, Not Required
Crocidolite	-	Blue Asbestos	*	-	NATA accreditation does not cover the performance of this service.
Amphiboles	-	Amosite and/or Crocidolite	**	-	Indicative data, theoretical holding time exceeded.
			***	-	Indicates that both * and ** apply.

(In reference to soil samples only) This report does not comply with the analytical reporting recommendations in the Western Australian Department of Health Guidelines for the Assessment and Remediation and Management of Asbestos Contaminated sites in Western Australia - May 2009.

Unless it is reported that sampling has been performed by SGS, the samples have been analysed as received.

Where reported: 'Asbestos Detected': Asbestos detected by polarised light microscopy, including dispersion staining.

Where reported: 'No Asbestos Found': No Asbestos Found by polarised light microscopy, including dispersion staining.

Where reported: 'UMF Detected': Mineral fibres of unknown type detected by polarised light microscopy, including dispersion staining. Confirmation by another independent analytical technique may be necessary.

Even after disintegration it can be very difficult, or impossible, to detect the presence of asbestos in some asbestos-containing bulk materials using polarised light microscopy. This is due to the low grade or small length or diameter of asbestos fibres present in the material, or to the fact that very fine fibres have been distributed intimately throughout the materials.

The QC and MU criteria are subject to internal review according to the SGS QAQC plan and may be provided on request or alternatively can be found here: www.sgs.com.au/en-gb/environment-health-and-safety.

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SAMPLE RECEIPT NOTIFICATION (SRN)

Work Order : **ES2440970**

Client : **JM ENVIRONMENTS**
Contact : **MR JAMES MCMAHON**
Address : **37 TOOKE STREET**
COOKS HILL NSW 2300

E-mail : **james@jmenvironments.com**
Telephone : **----**
Facsimile : **----**

Project : **JME24089**
Order number : **JME24089**
C-O-C number : **----**
Site : **----**
Sampler :

Laboratory : **Environmental Division Sydney**
Contact : **Customer Services ES**
Address : **277-289 Woodpark Road Smithfield**
NSW Australia 2164

E-mail : **ALSEnviro.Sydney@ALSGlobal.com**
Telephone : **+61-2-8784 8555**
Facsimile : **+61-2-8784 8500**

Page : **1 of 2**
Quote number : **ES2023JMENVIRO0001 (EN/222)**
QC Level : **NEPM 2013 B3 & ALS QC Standard**

Dates

Date Samples Received : **13-Dec-2024 17:21**
Client Requested Due : **18-Dec-2024**
Date

Issue Date : **13-Dec-2024**
Scheduled Reporting Date : **18-Dec-2024**

Delivery Details

Mode of Delivery : **Carrier**
No. of coolers/boxes : **1**
Receipt Detail :

Security Seal : **Intact.**
Temperature : **22.8°C - Ice Bricks present**
No. of samples received / analysed : **1 / 1**

General Comments

- This report contains the following information:
 - Sample Container(s)/Preservation Non-Compliances
 - Summary of Sample(s) and Requested Analysis
 - Proactive Holding Time Report
 - Requested Deliverables
- **Please refer to the Proactive Holding Time Report table below which summarises breaches of recommended holding times that have occurred prior to samples/instructions being received at the laboratory. The laboratory will process these samples unless instructions are received from you indicating you do not wish to proceed. The absence of this summary table indicates that all samples have been received within the recommended holding times for the analysis requested.**
- Please direct any queries you have regarding this work order to the above ALS laboratory contact.
- Unless otherwise stated, analytical work for this work order will be conducted at ALS Sydney, NATA accreditation no. 825, site no. 10911.
- Sample Disposal - Aqueous (3 weeks), Solid (2 months $\pm$ 1 week) from receipt of samples.
- Please be aware that APHA/NEPM recommends water and soil samples be chilled to less than or equal to 6°C for chemical analysis, and less than or equal to 10°C but unfrozen for Microbiological analysis. Where samples are received above this temperature, it should be taken into consideration when interpreting results. Refer to ALS EnviroMail 85 for ALS recommendations of the best practice for chilling samples after sampling and for maintaining a cool temperature during transit.

CHAIN OF CUSTODY & ANALYSIS REQUEST

SGS Environmental Services Unit 16, 33 Maddox Street Alexandria NSW 2015 Telephone No: (02) 85940400 Facsimile No: (02) 85940499 Email: au.samperecept.sydney@sgs.com	Company Name: JM Environments Address: 37 Tooke Street COOKS HILL NSW 2300 Contact Name: James McMahon	Project Name/No: JM624089 Purchase Order No: JM624089 Results Required By: 18 December 2024 Telephone: 0427 893 668 Facsimile: Email Results: james@jmenvironments.com
---	---	---

Client Sample ID	Date Sampled	Lab Sample ID	WATER	SOIL	PRESERVATIVE	NO OF CONTAINERS	NEW/RECK	WPH/BKM	OCF	SHM	Asbestos AF
BH12-1				X		2	X	X	X		X
BH13-1				X		1	X	X	X		X
BH14-1				X		2	X	X	X		X
BH15-1				X		1	X	X	X		X
BH16-1				X		2	X	X	X		X
BH17-1				X		1	X	X	X		X
QCA				X		1	X	X	X		X
QCI				X		1	X	X	X		X
QCA			X			1				X	

Environmental Division
Sydney
Work Order Reference
ES2440970



Telephone : + 61-2-8784 8655

FAT

Send to ALS

Relinquished By:	Date/Time:	Received By:	☒ N	S&S Newcastle	Date/Time
Relinquished By:	Date/Time:	Received By:			Date/Time 12/12/24 11:45
Samples Intact: ☒ Yes/ ☐ No	Temperature: Ambient / ☒ Chilled	☒ Yes/ ☐ No	Laboratory Quotation No:		
Comments:					

ATC#9939
ALS 13112124



CERTIFICATE OF ANALYSIS

Work Order : **ES2440970**

Client : **JM ENVIRONMENTS**

Contact : **MR JAMES MCMAHON**

Address : **37 TOOKE STREET
COOKS HILL NSW 2300**

Telephone : ----

Project : **JME24089**

Order number : **JME24089**

C-O-C number : ----

Sampler : ----

Site : ----

Quote number : **EN/222**

No. of samples received : **1**

No. of samples analysed : **1**

Page : 1 of 2

Laboratory : Environmental Division Sydney

Contact : Customer Services ES

Address : 277-289 Woodpark Road Smithfield NSW Australia 2164

Telephone : +61-2-8784 8555

Date Samples Received : 13-Dec-2024 17:21

Date Analysis Commenced : 15-Dec-2024

Issue Date : 17-Dec-2024 10:49



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

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

Ankit Joshi

Senior Chemist - Inorganics

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 Contract 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 Results

Sub-Matrix: SOIL
 (Matrix: SOIL)

Sample ID

				QC1A	----	----	----	----
Sampling date / time				12-Dec-2024 00:00	----	----	----	----
Compound	CAS Number	LOR	Unit	ES2440970-001	-----	-----	-----	-----
Result					----	----	----	----
EA055: Moisture Content (Dried @ 105-110°C)								
Moisture Content	----	1.0	%	6.2	----	---	----	----
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	<2	----	----	----	----
Copper	7440-50-8	5	mg/kg	<5	----	----	----	----
Lead	7439-92-1	5	mg/kg	<5	----	----	----	----
Nickel	7440-02-0	2	mg/kg	<2	----	----	----	----
Zinc	7440-66-6	5	mg/kg	<5	----	----	----	----
EG035T: Total Recoverable Mercury by FIMS								
Mercury	7439-97-6	0.1	mg/kg	<0.1	----	----	----	----



QUALITY CONTROL REPORT

Work Order : **ES2440970**

Page : 1 of 3

Client : **JM ENVIRONMENTS**
Contact : **MR JAMES MCMAHON**
Address : **37 TOOKE STREET**
COOKS HILL NSW 2300

Laboratory : **Environmental Division Sydney**
Contact : **Customer Services ES**
Address : **277-289 Woodpark Road Smithfield NSW Australia 2164**

Telephone : ----
Project : **JME24089**
Order number : **JME24089**
C-O-C number : ----
Sampler : ----
Site : ----
Quote number : **EN/222**
No. of samples received : **1**
No. of samples analysed : **1**

Telephone : **+61-2-8784 8555**
Date Samples Received : **13-Dec-2024**
Date Analysis Commenced : **15-Dec-2024**
Issue Date : **17-Dec-2024**



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

Ankit Joshi

Senior Chemist - Inorganics

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

* = The final LOR has been raised due to dilution or other sample specific cause; adjusted LOR is shown in brackets. The duplicate ranges for Acceptable RPD% are applied to the final LOR where applicable.

Laboratory Duplicate (DUP) Report

The quality control term Laboratory Duplicate refers to a randomly selected intralaboratory split. Laboratory duplicates provide information regarding method precision and sample heterogeneity. The permitted ranges for the Relative Percent Deviation (RPD) of Laboratory Duplicates are specified in ALS Method QWI-EN/38 and are dependent on the magnitude of results in comparison to the level of reporting: Result < 10 times LOR: No Limit; Result between 10 and 20 times LOR: 0% - 50%; Result > 20 times LOR: 0% - 20%.

Sub-Matrix: **SOIL**

Sub-Matrix: SOIL				Laboratory Duplicate (DUP) Report					
Laboratory sample ID	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: 6260951)									
ES2440463-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	4	8	65.0	No Limit
		EG005T: Nickel	7440-02-0	2	mg/kg	10	18	59.8	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	8	14	53.6	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	14	26	56.3	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	49	45	9.5	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	58	82	34.7	0% - 50%
ES2440956-001	Anonymous	EG005T: Cadmium	7440-43-9	1	mg/kg	<1	<1	0.0	No Limit
		EG005T: Chromium	7440-47-3	2	mg/kg	62	66	6.5	0% - 20%
		EG005T: Nickel	7440-02-0	2	mg/kg	7	6	0.0	No Limit
		EG005T: Arsenic	7440-38-2	5	mg/kg	6	6	0.0	No Limit
		EG005T: Copper	7440-50-8	5	mg/kg	8	13	48.4	No Limit
		EG005T: Lead	7439-92-1	5	mg/kg	20	26	24.1	No Limit
		EG005T: Zinc	7440-66-6	5	mg/kg	34	34	0.0	No Limit
EA055: Moisture Content (Dried @ 105-110°C) (QC Lot: 6260952)									
ES2440463-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	13.9	9.5	37.2	0% - 50%
ES2440693-001	Anonymous	EA055: Moisture Content	----	0.1 (1.0)*	%	16.3	16.5	1.2	0% - 50%
EG035T: Total Recoverable Mercury by FIMS (QC Lot: 6260950)									
ES2440463-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	0.0	No Limit
ES2440956-001	Anonymous	EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	<0.1	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 Concentration	Spike Recovery (%) LCS	Acceptable Limits (%)	
Method: Compound	CAS Number	LOR	Unit	Result			Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6260951)								
EG005T: Arsenic	7440-38-2	5	mg/kg	<5	121.1 mg/kg	106	88.0	113
EG005T: Cadmium	7440-43-9	1	mg/kg	<1	0.74 mg/kg	107	70.0	130
EG005T: Chromium	7440-47-3	2	mg/kg	<2	19.6 mg/kg	123	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	102	82.0	119
EG005T: Nickel	7440-02-0	2	mg/kg	<2	15.3 mg/kg	107	80.0	120
EG005T: Zinc	7440-66-6	5	mg/kg	<5	139.3 mg/kg	97.6	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6260950)								
EG035T: Mercury	7439-97-6	0.1	mg/kg	<0.1	0.087 mg/kg	82.8	70.0	125

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				Matrix Spike (MS) Report			
				Spike	SpikeRecovery(%)	Acceptable Limits (%)	
Laboratory sample ID	Sample ID	Method: Compound	CAS Number	Concentration	MS	Low	High
EG005(ED093)T: Total Metals by ICP-AES (QCLot: 6260951)							
ES2440463-001	Anonymous	EG005T: Arsenic	7440-38-2	50 mg/kg	118	70.0	130
		EG005T: Cadmium	7440-43-9	50 mg/kg	104	70.0	130
		EG005T: Chromium	7440-47-3	50 mg/kg	112	68.0	132
		EG005T: Copper	7440-50-8	250 mg/kg	107	70.0	130
		EG005T: Lead	7439-92-1	250 mg/kg	98.1	70.0	130
		EG005T: Nickel	7440-02-0	50 mg/kg	117	70.0	130
		EG005T: Zinc	7440-66-6	250 mg/kg	121	66.0	133
EG035T: Total Recoverable Mercury by FIMS (QCLot: 6260950)							
ES2440463-001	Anonymous	EG035T: Mercury	7439-97-6	5 mg/kg	88.8	70.0	130



QA/QC Compliance Assessment to assist with Quality Review

Work Order	: ES2440970	Page	: 1 of 4
Client	: JM ENVIRONMENTS	Laboratory	: Environmental Division Sydney
Contact	: MR JAMES MCMAHON	Telephone	: +61-2-8784 8555
Project	: JME24089	Date Samples Received	: 13-Dec-2024
Site	: ----	Issue Date	: 17-Dec-2024
Sampler	: ----	No. of samples received	: 1
Order number	: JME24089	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, where applicable to the methodology, **NO** surrogate recovery outliers occur.

Outliers : Analysis Holding Time Compliance

- **NO** Analysis Holding Time Outliers exist.

Outliers : Frequency of Quality Control Samples

- **NO** Quality Control Sample Frequency Outliers exist.



Analysis Holding Time Compliance

If samples are identified below as having been analysed or extracted outside of recommended holding times, this should be taken into consideration when interpreting results. This report summarizes extraction / preparation and analysis times and compares each with ALS recommended holding times (referencing USEPA SW 846, APHA, AS and NEPM) based on the sample container provided. Dates reported represent first date of extraction or analysis and preclude subsequent dilutions and reruns. A listing of breaches (if any) is provided herein. Holding time for leachate methods (e.g. TCLP) vary according to the analytes reported. Assessment compares the leach date with the shortest analyte holding time for the equivalent soil method. These are: organics 14 days, mercury 28 days & other metals 180 days. A recorded breach does not guarantee a breach for all non-volatile parameters. Holding times for VOC in soils vary according to analytes of interest. Vinyl Chloride and Styrene holding time is 7 days; others 14 days. A recorded breach does not guarantee a breach for all VOC analytes and should be verified in case the reported breach is a false positive or Vinyl Chloride and Styrene are not key analytes of interest/concern.

Matrix: SOIL

Evaluation: ✖ = Holding time breach ; ✔ = Within holding time.

Method	Sample Date	Extraction / Preparation			Analysis		
Container / Client Sample ID(s)		Date extracted	Due for extraction	Evaluation	Date analysed	Due for analysis	Evaluation
EA055: Moisture Content (Dried @ 105-110°C)							
Soil Glass Jar - Unpreserved (EA055) QC1A	12-Dec-2024	----	----	----	15-Dec-2024	26-Dec-2024	✔
EG005(ED093)T: Total Metals by ICP-AES							
Soil Glass Jar - Unpreserved (EG005T) QC1A	12-Dec-2024	15-Dec-2024	10-Jun-2025	✔	16-Dec-2024	10-Jun-2025	✔
EG035T: Total Recoverable Mercury by FIMS							
Soil Glass Jar - Unpreserved (EG035T) QC1A	12-Dec-2024	15-Dec-2024	09-Jan-2025	✔	17-Dec-2024	09-Jan-2025	✔



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	17	11.76	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Mercury by FIMS	EG035T	2	12	16.67	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	2	13	15.38	10.00	✓	NEPM 2013 B3 & ALS QC Standard
Laboratory Control Samples (LCS)							
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Method Blanks (MB)							
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	13	7.69	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Matrix Spikes (MS)							
Total Mercury by FIMS	EG035T	1	12	8.33	5.00	✓	NEPM 2013 B3 & ALS QC Standard
Total Metals by ICP-AES	EG005T	1	13	7.69	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 (SnCl ₂) (Cold Vapour generation) AAS) FIM-AAS is an automated flameless atomic absorption technique. Mercury in solids are determined following an appropriate acid digestion. Ionic mercury is reduced online to atomic mercury vapour by SnCl ₂ which is then purged into a heated quartz cell. Quantification is by comparing absorbance against a calibration curve. This method is compliant with NEPM Schedule B(3)
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).